SONY

DIGITAL AUDIO MIXER

DMX-B4008
DMX-B4016

OPERATION MANUAL English

1st Edition (Revised 1)

Serial No. 10001 and Higher (UC)

Serial No. 30001 and Higher (EK)

For customers in the USA

WARNING
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of the FCC Rules.

For customers in Canada
This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

Pour les utilisateurs au Canada
Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiées dans le Règlement sur le brouillage radioélectrique.

Bescheinigung des Herstellers/Importeurs
Hiermit wird bescheinigt, daß die digitale Ton-Mischpult DMX-B4008/B4016 in Übereinstimmung mit den Bestimmungen der BMPT-Amtsblatt Vfg 243/1991 und Vfg 46/1992 funkenstört sind.
Der vorschriftsmäßige Betrieb mancher Geräte (z.B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung.
Dem Bundesamt für Zulassungen in der Telekommunikation wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Sony Deutschland GmbH
Hugo Eckener Str. 20
50829 Köln

Hinweis
Gemäß der Amtsblätter des BMPT Nrn. 61/1991 und 6/1992 wird der Betreiber darauf aufmerksam gemacht, daß die von ihm mit diesem Gerät zusammengestellte Anlage auch den technischen Bestimmungen dieser Amtsblätter genügen muß.

WARNING (For the customers in the United Kingdom)
THIS APPARATUS MUST BE EARTHED

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow. The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

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About This Manual

Purpose of this manual and intended audience

This manual is the operation manual for the DMX-B4008/B4016 Digital Audio Mixer. The DMX-B4008/B4016 is intended for use primarily by professionals working in program production in broadcasting studios. Therefore this manual assumes a certain degree of background knowledge and experience in operating audio mixing consoles.

Organization of this manual

This manual is made up of the following sections.

Chapter 1 Overview
Describes the principal features of the unit and shows how a mixing system can be configured around it.

Chapter 2 Location and Function of Parts
Identifies the parts of the unit, and describes the internal signal flow and signal flow in mixing systems configured around this unit. Also explains connections and the power-on procedure.

Chapter 3 Operation
Describes operating procedures, with detailed explanations of the setup screens.

Appendixes
- Error messages
  Describes the messages which appear when the unit does not work properly.
- Specifications
  Lists the principal specifications of the unit.

Index

Related manuals

In addition to this manual, the DMX-B4008/B4016 is supplied with a Maintenance Manual Part 1. Refer to the maintenance manual for details regarding topics not covered in this manual.

Chapter 1
Overview

This chapter describes the principal features of the unit and shows how a mixing system can be configured around it.

1-1 Features of the DMX-B4008/B4016 1-2
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1-1 Features of the DMX-B4008/B4016

The DMX-B4008/B4016 is an audio mixing console designed for use in on-air studios of radio and television stations.

Digital signal processing

Input and output of 24-bit AES/EBU digital audio signals, together with internal signal processing using 32 bits, assure the high sound quality associated with digital audio and permit computer controlled automated mixing.

Snapshot automation

A snapshot automation function provides instant recall of unit states, or scenes. You can save up to 99 scenes in the internal scene memory. Each scene contains the complete state of the unit, including control panel switch settings, filter and equalizer settings for individual source signals and internal signal paths, allowing you to preset the unit for specific programs. Automation data can be written to and loaded from 3.5-inch floppy disks.

Matrix switcher links to channel settings and transport control

When the internal matrix switcher assigns a source signal to an audio channel, it automatically sets up the new channel to use the equalizer and filter settings which you have already assigned to that signal, as well as the same output bus. This eliminates the need for repetitive patch operations, and allows you to operate the unit with the minimum of fader manipulation. You can also link transport control commands to the matrix switcher, for control of external equipment using the faders, and the PLAY and STOP buttons of this unit.

Touch panel display

An interactive touch panel display permits instant, visual verification of mixer settings.

Hierarchical access levels

The unit provides three levels of access to unit setup functions. For example, to prevent misoperations, you can specify an announcer level for on-air operations, a sound engineer level for editing, and a systems engineer level for periodic checks and maintenance.

AES/EBU signal ID display

You can insert source and destination IDs into the channel status bits of AES/EBU signals, and automatically display them on the control panel, making it immediately clear which source signals will be affected by a fader operation.

Self diagnostics

A warning message appears on the screen if a fault occurs during operation. The system can perform self diagnostics for each internal subsystem and display detailed reports.

Remote control

- A GPI interface permits control of peripheral devices with the channel faders and the PLAY and STOP buttons.
- When an optional machine controller is installed, operations such as cue, start, and preview are available to control peripheral equipment such as CD players, DAT and MO disk drives from this unit.
- You can control this unit from peripheral equipment over the serial and parallel interfaces, for remote control of channel fader levels, mute operations and scene settings for snapshot automation.

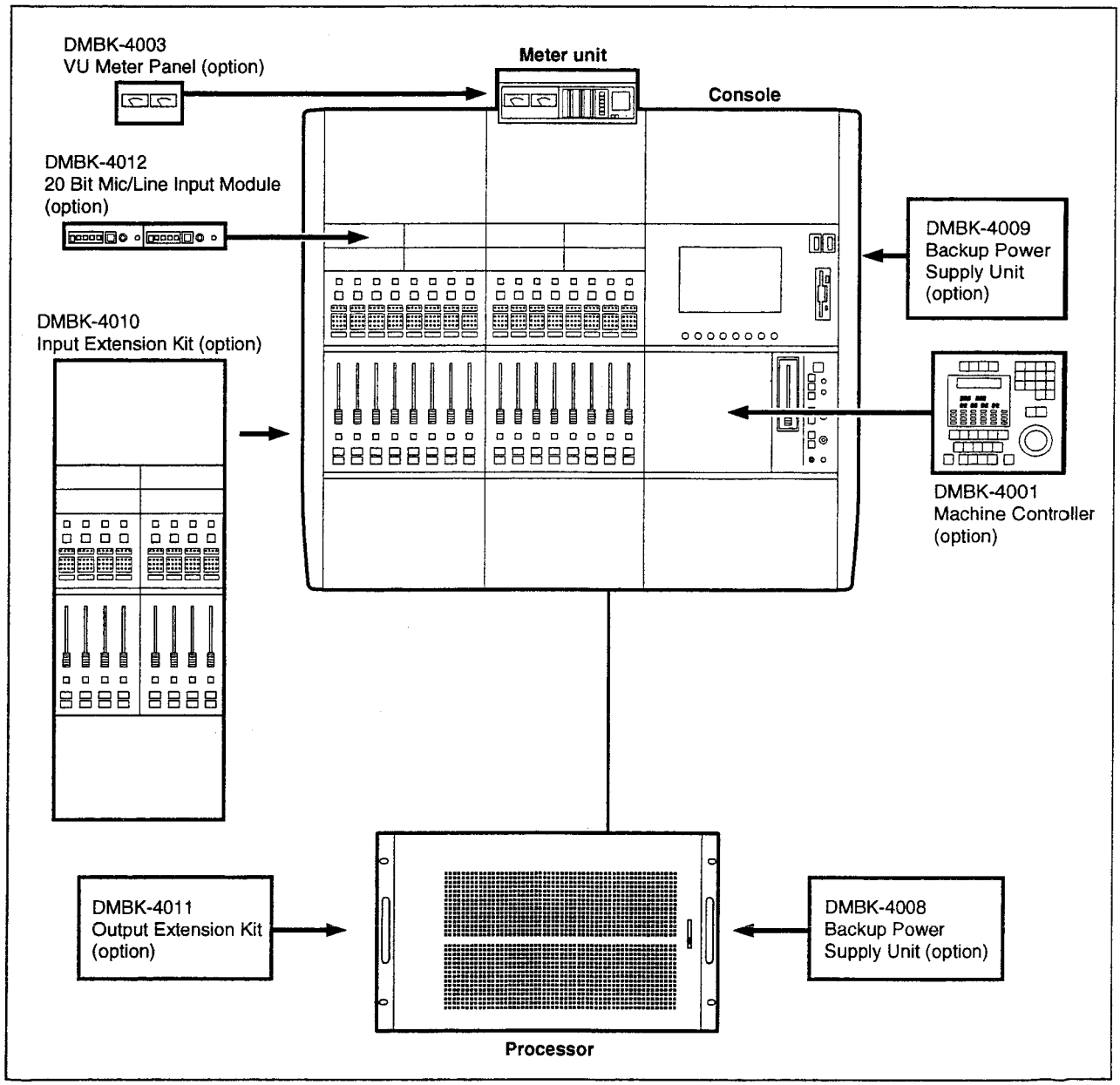
Backup power supply

An optional backup power supply unit is available to ensure continuous operation in case of power failure. The main and backup power units can draw power from the same or independent sources.

1-2 System Configurations

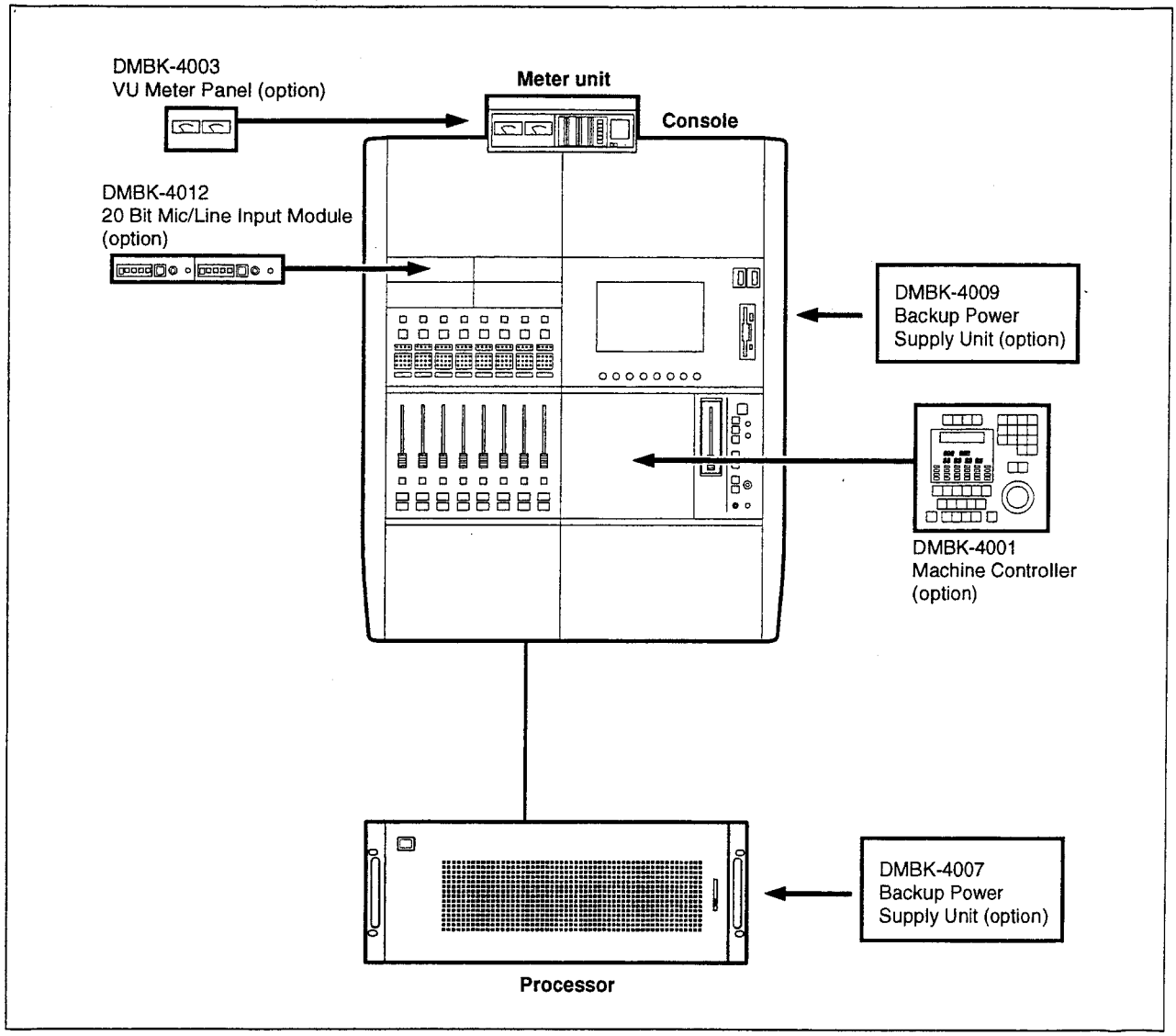
The basic units in a DMX-B4008/B4016 system are the console, processor and meter units. The DMX-B4008 is able to handle up to 8 channels, and the DMX-B4016 up to 16 channels (expandable to 24 when options are installed). Various options are available, as shown in the following illustrations.

DMX-B4016 system configuration



DMX-B4016 system configuration

DMX-B4008 system configuration



DMX-B4008 system configuration

Chapter 2
Location and Function of Parts

This chapter identifies the parts of the unit and describes the internal signal flow as well as the signal flow in the mixing systems configured around the unit. It also explains connections and the power-on procedure.

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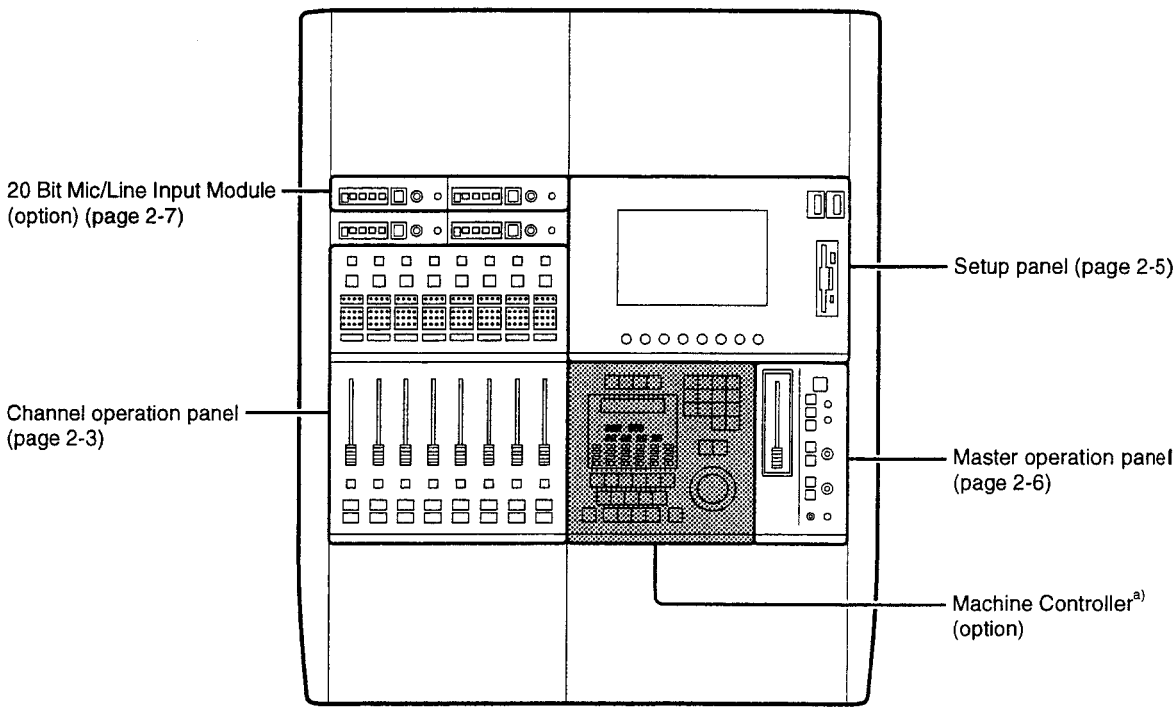
2-1 Console

2-1-1 Control Panel

Control panel layout

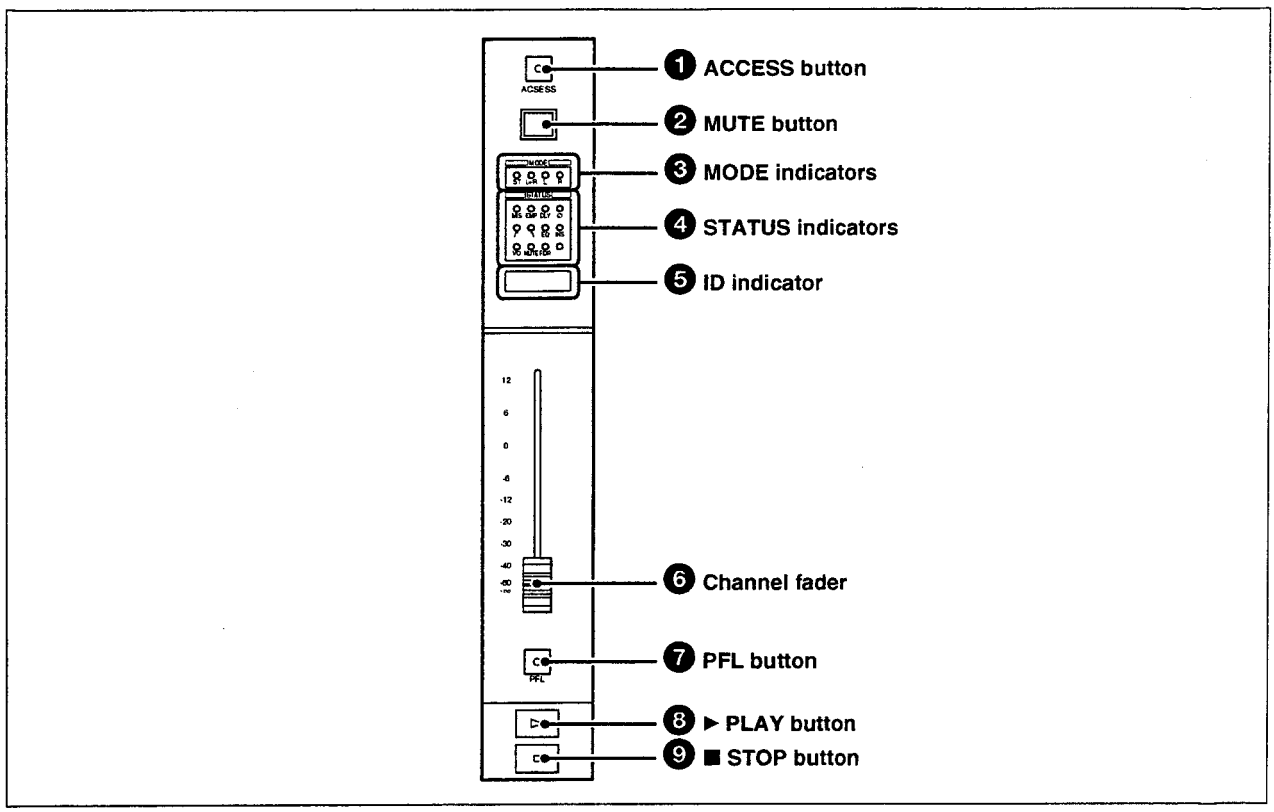


a) For details, see the supplement to this manual which will be issued when the Machine Controller is available.

Control panel layout

Channel operation panel

The channel operation panel has one operation block for each channel.



Channel operation block

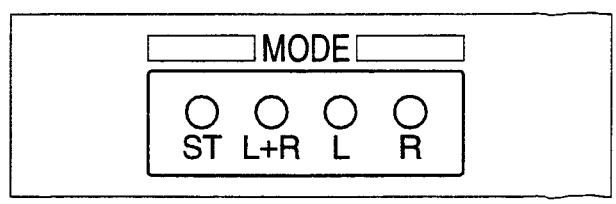
❶ ACCESS button

Press this button, turning it on, to bring up the CHANNEL screen *(see page 3-21)* on the setup display. You can then check the settings for this channel and change them as necessary. You can also copy channel settings from one channel to another, using the following procedure. Hold down the ACCESS button of the source channel and press the ACCESS button of the destination channel. The ACCESS button of the destination channel will start flashing. Next, press the ACCESS button of the destination channel again, and it will change from flashing to continuously lit. The settings are copied automatically from the source channel to the destination channel (channel copy function). When you change settings on the CHANNEL screen, the new settings will apply to all channels for which the ACCESS buttons are lit.

❷ MUTE button

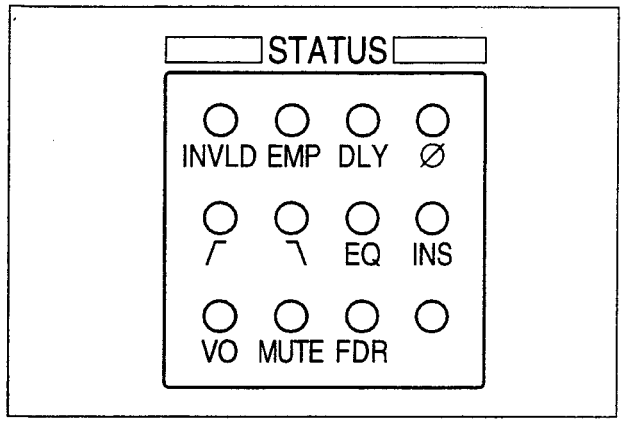
Press this button to toggle muting of signals on this channel on and off. Pressing this button has the same effect as pressing the MUTE button in the CHANNEL screen *(see page 3-21)*. The button pressed last takes precedence.

❸ MODE indicators



These indicators show the input mode of the channel.
ST: stereo
L+R: left and right audio signals mixed
L: left audio signal
R: right audio signal

❹ STATUS indicators



These indicators show the status of signals allocated to the channel.

INVLD: Lights when there is an error on the input signal.

EMP: Lights when the emphasis bit of the input signal is on.

DLY: Reserved for future use.

Ø : Lights when the phase inversion circuits of either the left or right channel are enabled.

⌐ : Lights when the low-cut filter is enabled.

¬ : Lights when the high-cut filter is enabled.

EQ: Lights when the equalizer is enabled.

INS: Lights when signals are output to an external insertion circuit.

VO: Lights when the signal is a voice over slave. *(See page 3-23)*

MUTE: Lights when the signal can be muted from external equipment.

FDR: Lights when the signal can be controlled from an external fader.

❺ ID indicator

This indicator shows an identifier, up to four alphanumeric characters in length, for the device connected to the channel. You can select one of the following three ID formats.

- The origin information contained in the channel status bits of an AES/EBU input signal (source ID code added to the AES/EBU signal by an external device)
- The source name as specified in the SOURCE INFORMATION screen
- The channel name as specified in the CHANNEL INFORMATION screen

❻ Channel fader

The channel fader adjusts the output level of the channel.

Gain is adjustable from –∞ to +12 dB. When linking GPI output to fader operations, GPI signals are output at positions higher than –60 dB.

❼ PFL (pre-fader listen) button

Press this button, turning it on, to output the signal allocated to this channel from the headphones and from the speaker on the meter unit. The PFL indicator on the meter unit lights, and the signal is output without passing through the channel fader.

If you have installed an optional machine controller, and if the PREVIEW item in the NARRATION SOURCE/PFL LOGIC screen is set to EN (enable), then turning this button on has the effect of cueing up the device (CD player, DAT and so on) controlled by the machine controller and beginning playback.

❽ ▶PLAY button

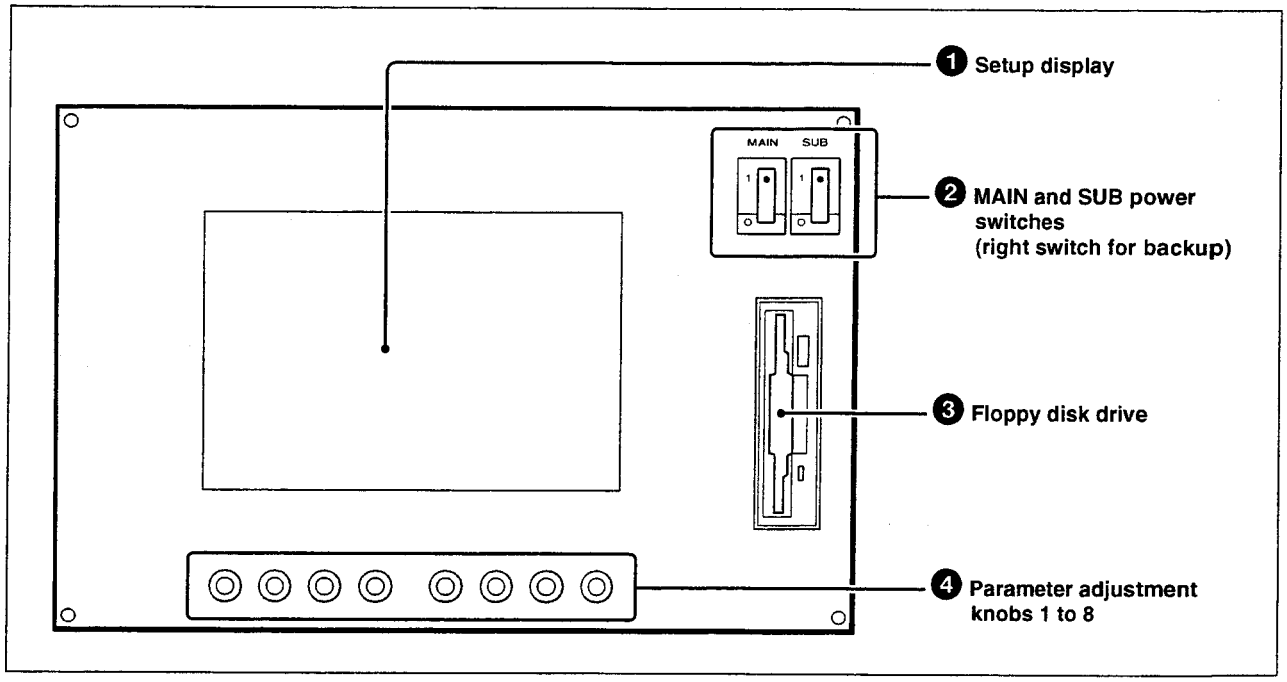
Pressing this button has the same effect as pressing the PLAY button on the CD player, DAT or other device allocated to this channel.

❾ ■STOP button

Pressing this button has the same effect as pressing the STOP button on the CD player, DAT or other device allocated to this channel.

Setup panel

The setup panel allows you to make almost all audio and configuration settings.



Setup panel

❶ Setup display

This display is used for interactive configuration of the unit, including output bus allocations, and equalizer, filter and signal path settings.

For details, see Section 3-2 "Setup Operations" (page 3-4).

❷ MAIN and SUB power switches

These switches turn the console power supply on and off.

For details, see Section 2-7 "Power-on procedure" (page 2-24).

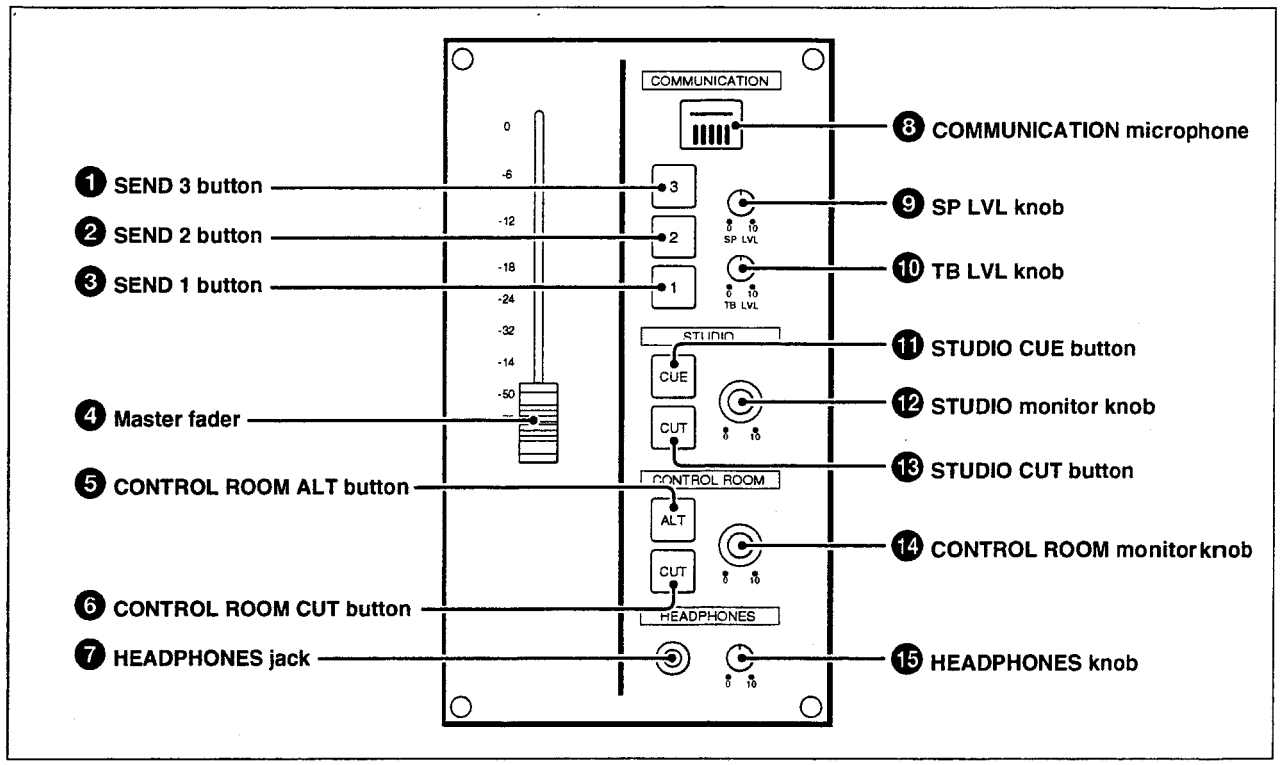
❸ Floppy disk drive

This disk drive allows you to save console settings to 3.5-inch 2HD floppy disks.

❹ Parameter adjustment knobs 1 to 8

These knobs adjust parameters for controls on the setup display.

Master operation panel



Master operation panel

❶ SEND 3 button
❷ SEND 2 button
❸ SEND 1 button
Each of these buttons lights while held down, and connects the audio signal from the COMMUNICATION microphone to the corresponding intercom circuit.
An internal jumper can be set so that pressing the SEND 1 button ❸ interrupts studio monitor output with the microphone output.

For details refer to the Maintenance Manual.

❹ Master fader
Controls the PGM (program) bus output level. Gain is adjustable from –∞to 0 dB.

❺ CONTROL ROOM ALT (alternate speaker) button
Press this button to toggle between the MAIN and ALT monitor speakers in the control room. This button lights when the audio signal is output to the ALT speaker.

❻ CONTROL ROOM CUT button
Press this button, turning it on, to cut the output to the MAIN and ALT monitor speakers in the control room.

❼ HEADPHONES jack
Connect monitor headphones.
Normally the control room monitor signal is output from this connector. When the PFL button is on, the pre-fader listen signal is output.

❽ COMMUNICATION microphone
A talk-back microphone

❾ SP LVL (speaker level) knob
Controls the volume of the speaker on the meter unit.

❿ TB LVL (talk-back level) knob
Adjusts the transmission level of talk-back audio on the intercom circuit.

⓫ STUDIO CUE button
Press this button, turning it on, to enable the cue signal circuit and output a cue signal to the studio.

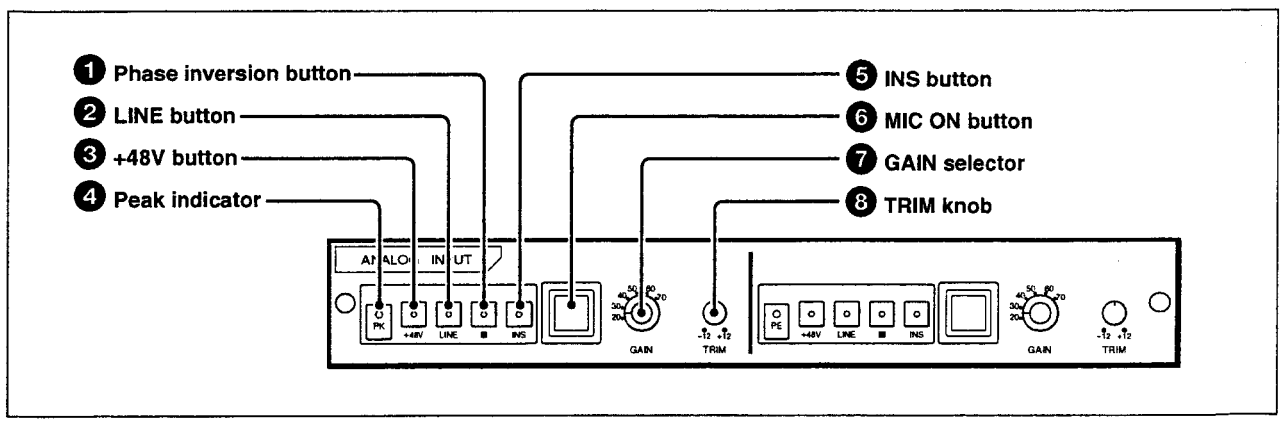
⓬ STUDIO monitor knob
Controls the volume of the studio monitor speaker.

⓭ STUDIO CUT button
Press this button, turning it on, to cut output to the studio monitor speaker.

⓮ CONTROL ROOM monitor knob
Adjusts the volume of the control room monitor speaker.

⓯ HEADPHONES knob
Controls monitor headphone volume.

20-Bit Mic/Line Input Module (option)



20-bit microphone/line input module

❶ Phase inversion button
Press this button, turning it on, to invert the phase of an analog signal.

❷ LINE button
The LINE button selects the type of analog input signal.
Lit: line input
Off: microphone input

❸ +48V button
Press this button, turning it on, to switch on the +48 V power supply to a microphone.

❹ Peak indicator
Lights when the input signal to the module exceeds –10 dBFs.

❺ INS (insertion) button
Enables or disables insertion circuits, which allow the connection of external analog effectors.
Insertion circuits are enabled when the button is lit.

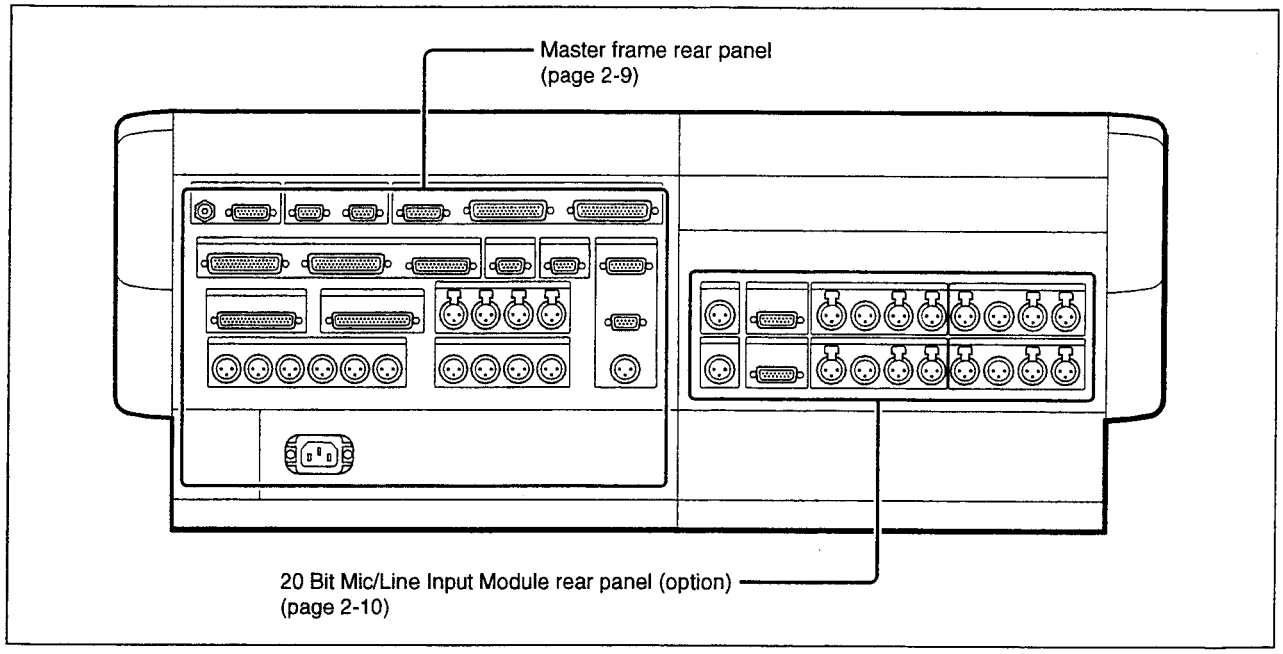
❻ MIC ON button
Turns the microphone input on and off. The microphone input is on when the button is lit.

❼ GAIN selector
Selects the microphone input gain from the following values:
20 dB, 30 dB, 40 dB, 50 dB, 60 dB, 70 dB

❽ TRIM knob
Provides fine adjustment of the microphone or line input gain in the range ±12 dB.

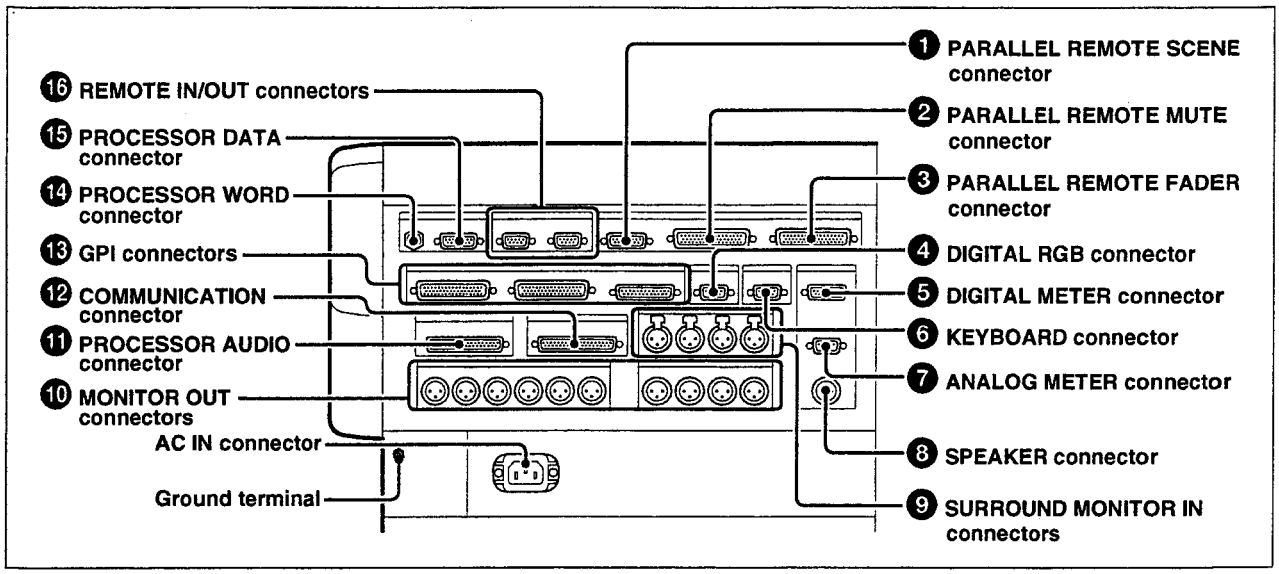
2-1-2 Console Rear Panel

Rear panel layout



Rear panel layout

Master frame rear panel



Master frame rear panel

① PARALLEL REMOTE SCENE connector (D-sub 15-pin)
Connect external equipment for remote recall of up to eight scenes (snapshots) of the console settings stored in memory on this unit.

② PARALLEL REMOTE MUTE connector (D-sub 50-pin)
Connect external equipment for remote control of channel muting on this unit.

③ PARALLEL REMOTE FADER connector (D-sub 50-pin)
Connect external equipment for remote control of channel faders on this unit.

④ DIGITAL RGB connector (D-sub 9-pin)
Connect a video monitor for monochrome display of the setup screens.

⑤ DIGITAL METER connector (D-sub 15-pin)
Connect to the DIGITAL METER connector on the rear panel of the meter unit.

⑥ KEYBOARD connector (D-sub 9-pin)
Connect a keyboard to be used in place of the on-screen keyboard in the setup panel.

⑦ ANALOG METER connector (D-sub 9-pin)
Connect to the METER connector on the rear panel of the optional VU Meter Panel.

⑧ SPEAKER connector (XLR 3-pin)
Connect to the SPEAKER connector of the meter unit.

⑨ SURROUND MONITOR IN connectors (XLR 3-pin)
Connect an external audio device with surround output.

⑩ MONITOR OUT connectors (XLR 3-pin)
Connect an external device to monitor the output from this unit. The analog audio signals output from each of the connectors are as follows:

CONTROL ROOM MONITOR OUT
L, R: Output to MAIN speakers
ALT L, ALT R: Output to ALT speakers
C: Output to center speaker
S: Output to surround speaker

STUDIO MONITOR OUT
SP-L, SP-R: Output to studio speakers
HP-L, HP-R: Output to headphones

⑪ PROCESSOR AUDIO connector (D-sub 37-pin)
Connect to the CONSOLE AUDIO connector of the processor.

⓬ COMMUNICATION connector (D-sub 37-pin)
Connect talk-back, reverse talk-back and other communication signals.

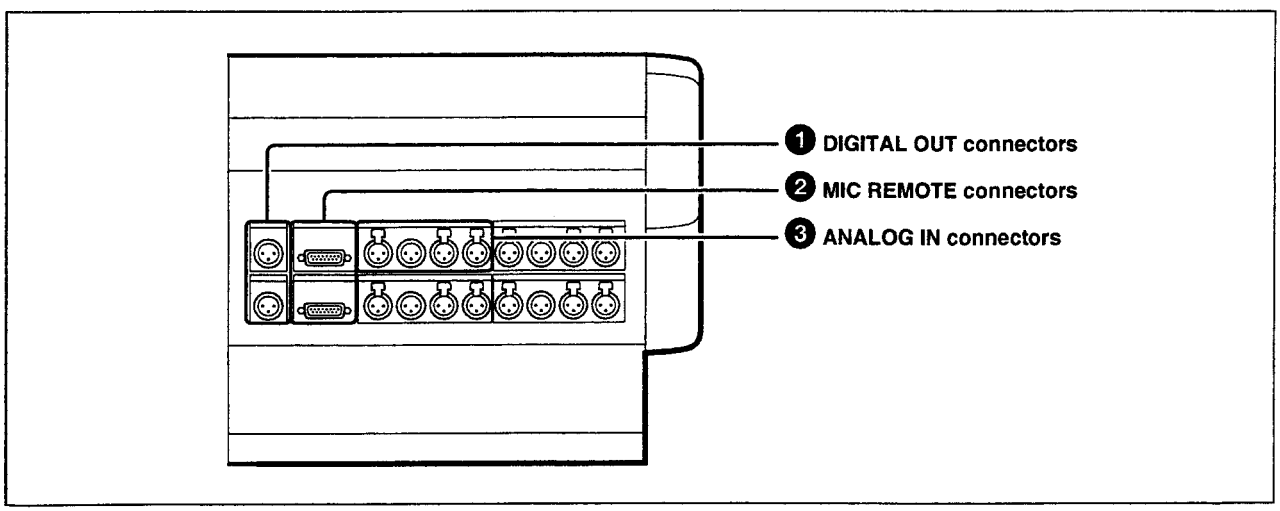
⓭ GPI connectors (D-sub 50-pin, D-sub 25-pin)
GPI1 and GPI2 (50-pin): Connect devices to be controlled by the ▶PLAY button and ■STOP button on the channel operation panel. One connector can be connected to up to eight devices.
GPI3 (25-pin): Connect a device which outputs on-air, commercial, and other tally signals.

⓮ PROCESSOR WORD (word sync) connector (BNC)
Connect the word sync signal output from the REF WORD OUT connector of the processor.

⓯ PROCESSOR DATA connector (D-sub 15-pin)
Connect to the CONSOLE DATA connector of the processor.

⓰ REMOTE IN/OUT connectors (D-sub 9-pin)
Connect to an editor or other device having a Sony 9-pin remote control connector.

20 Bit Mic/Line Input Module rear panel (option)



20 Bit Mic/Line Input Module rear panel

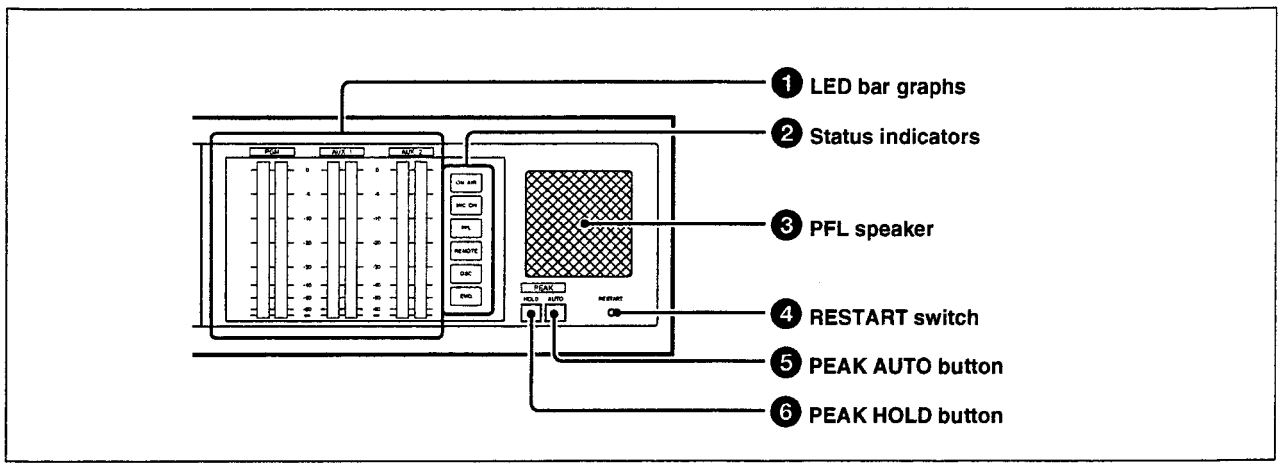
❶ DIGITAL OUT connectors (XLR 3-pin)
Output the digital audio signals from the A/D converter in the module. Connect to the INPUT connectors of the processor.

❷ MIC REMOTE connectors (D-sub 15-pin)
Connect to fader units for controlling the MIC ON button of the module.

❸ ANALOG IN connectors (XLR 3-pin)
RTN/SND (return/send): When the INS button of the module is on, analog audio signals are output from the SND connector, and then reinput to the RTN connector after processing by an effector or other external device.
LINE: Connect a line input.
MIC: Connect a microphone input.

2-2 Meter Unit

2-2-1 Meter Unit Front Panel



Meter unit front panel

1 LED bar graphs
Show the output levels of this unit. The levels shown differ between the DMX-B4008 and DMX-B4016.
When a PFL button on the channel operation panel is lit, the rightmost pair of bar graphs show the PFL signal output levels.
DMX-B4008: From the left, PGM, AUX1 and AUX2
DMX-B4016: From the left, PGM, one of MIX 1 to MIX 8, and AUX 1 or AUX 2

2 Status indicators
ON AIR: Lights when on-air tally signals are input to the GPI 3 connector.
MIC ON: Lights when the MIC ON button of the 20 Bit Mic/Line Input Module is on.
PFL: Lights when the PFL button of a channel operation block is on.
REMOTE: Lights when the external device is muting the channel signal or controlling the channel fader.
OSC: Lights when an oscillator signal is being output for adjustment of external equipment.
EMG: Lights when a fault of some kind occurs in the unit.

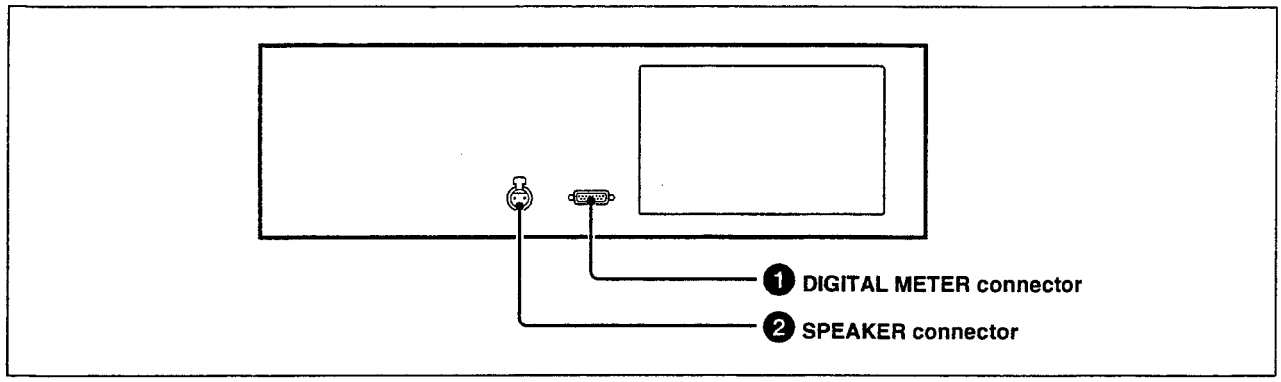
3 PFL speaker
When a PFL button on the channel operation panel is lit, audio signals for that channel are output from this speaker without passing through the channel fader. It also outputs intercom signals.

4 RESTART switch
Restarts the unit and initializes the system. Switch on by inserting a thin rod into the hole.

5 PEAK AUTO button
Press this button, turning it on, to hold the display of peak levels on the LED bar graphs for about two seconds.

6 PEAK HOLD button
Press this button, turning it on, to hold the display of peak levels on the LED bar graphs.

2-2-2 Meter Unit Rear Panel



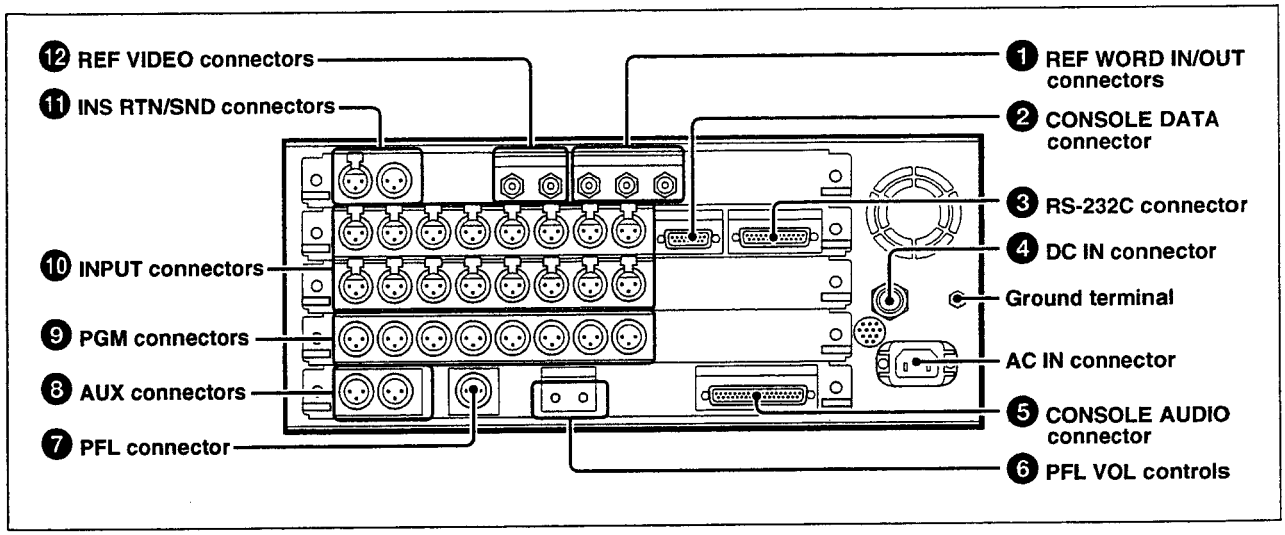
Meter unit rear panel

1 DIGITAL METER connector (D-sub 15-pin)
Connect to the DIGITAL METER connector on the rear panel of the console.

2 SPEAKER connector (XLR 3-pin)
Connect to the SPEAKER connector on the rear panel of the console.

2-3 Processor

2-3-1 Processor Rear Panel (DMX-B4008)



Processor rear panel (DMX-B4008)

❶ REF WORD (reference word sync) IN/OUT connectors (BNC)
Input word sync signals to the REF WORD IN connector. Connect reference word sync signals output from the REF WORD OUT connector to the console PROCESSOR WORD connector, using the supplied cable with BNC connectors.

❷ CONSOLE DATA connector (D-sub 15-pin)
Connect to the console PROCESSOR DATA connector with the supplied cable.

❸ RS-232C connector (D-sub 25-pin)
This connector is reserved for maintenance.

❹ DC IN connector
When using the optional DMBK-4007 Backup Power Supply Unit, connect DC power output from the backup power supply unit.

❺ CONSOLE AUDIO connector (D-sub 37-pin)
Connect to the console PROCESSOR AUDIO connector with the supplied cable.

❻ PFL VOL (pre-fader listen volume) controls
Control the output level of the PFL signals output to the console from the CONSOLE AUDIO connector. Use a screwdriver to rotate these controls.

❼ PFL (pre-fader listen) connector (XLR 3-pin)
When a PFL button on the operation panel is lit, digital audio signals for that channel are output from this connector without passing through the channel fader.

❽ AUX (auxiliary) connectors (XLR 3-pin)
Output the mixed digital audio signals assigned to the AUX 1 and AUX 2 buses.

❾ PGM (program) connectors (XLR 3-pin)
Output the mixed digital audio signals assigned to the PGM bus.

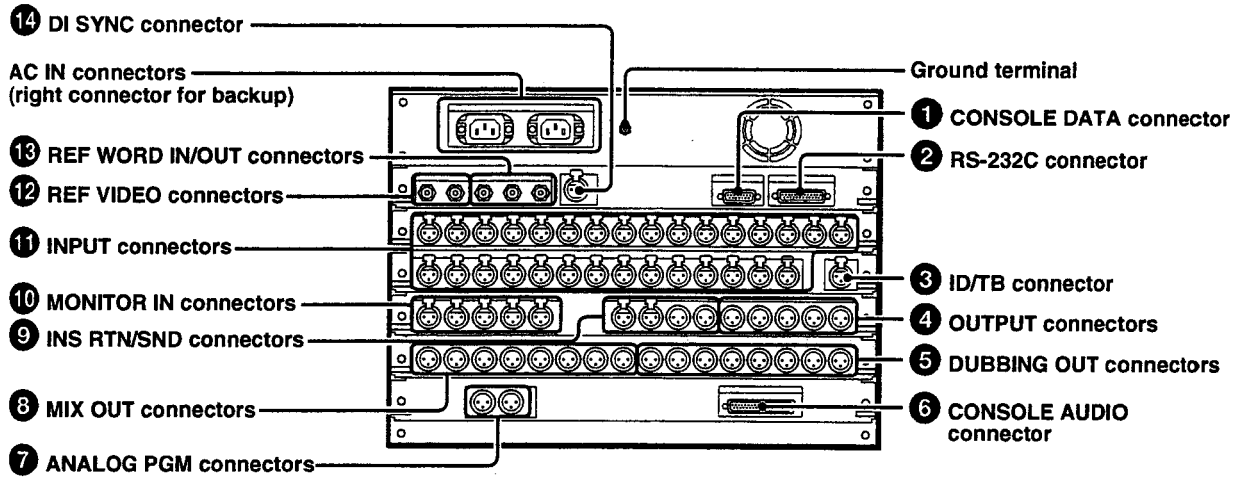
❿ INPUT connectors (XLR3-pin)
Input AES/EBU digital audio signals. One stereo signal may be input to each of the 16 connectors. Eight of the input signals may be assigned to the eight console input channels.

⓫ INS RTN/SND (insertion return/send) connectors (XLR 3-pin)
Use the INS SND connector for output of digital signals to an effector or other external device. After processing, input the processed signals to the INS RTN connector.

⓬ REF (reference) VIDEO connectors (BNC)
Input NTSC or PAL reference video signals. The two connectors form a loop-through connection.

Unless you are passing the input signals to other equipment, always terminate the empty connector with the supplied terminator.

2-3-2 Processor Rear Panel (DMX-B4016)



Processor rear panel (DMX-B4016)

❶ CONSOLE DATA connector (D-sub 15-pin)
Connect to the console PROCESSOR DATA connector with the supplied cable.

❷ RS-232C connector (D-sub 25-pin)
This connector is reserved for maintenance.

❸ ID/TB (talk-back) connector (XLR 3-pin)
Input the station ID and other digital audio signals.

❹ OUTPUT connectors (XLR 3-pin)
Output mixed digital audio signals.
PGM 1, 2: Output the signals assigned to the PGM buses.
AUX 1, 2: Output the signals assigned to the AUX 1 and AUX 2 buses.
PFL: When a PFL button on the operation panel is lit, signals for that channel are output from this connector without passing through the channel fader.

❺ DUBBING OUT connectors (XLR 3-pin)
Output the digital audio signals assigned to DUBBING OUT 1 to 8 (either PGM output signals, or input signals connected to the INPUT connectors).

❻ CONSOLE AUDIO connector (D-sub 37-pin)
Connect to the console PROCESSOR AUDIO connector with the supplied cable.

❼ ANALOG PGM connectors (XLR 3-pin)
Output analog PGM signals after D/A conversion.

❽ MIX OUT connectors (XLR 3-pin)
Output the mixed digital audio signals assigned to the MIX 1 to MIX 8 buses.

❾ INS RTN/SND (return/send) connectors (XLR 3-pin)
Output digital audio signals from the INS SND 1 and 2 connectors to an effector or other external device, and input to the INS RTN 1 and 2 connectors after processing.

⑩ MONITOR IN connectors (XLR 3-pin)
Input digital audio signals for monitoring. There is one connector for input of on-air monitor signals, and four connectors for input of monitor signals from external equipment.

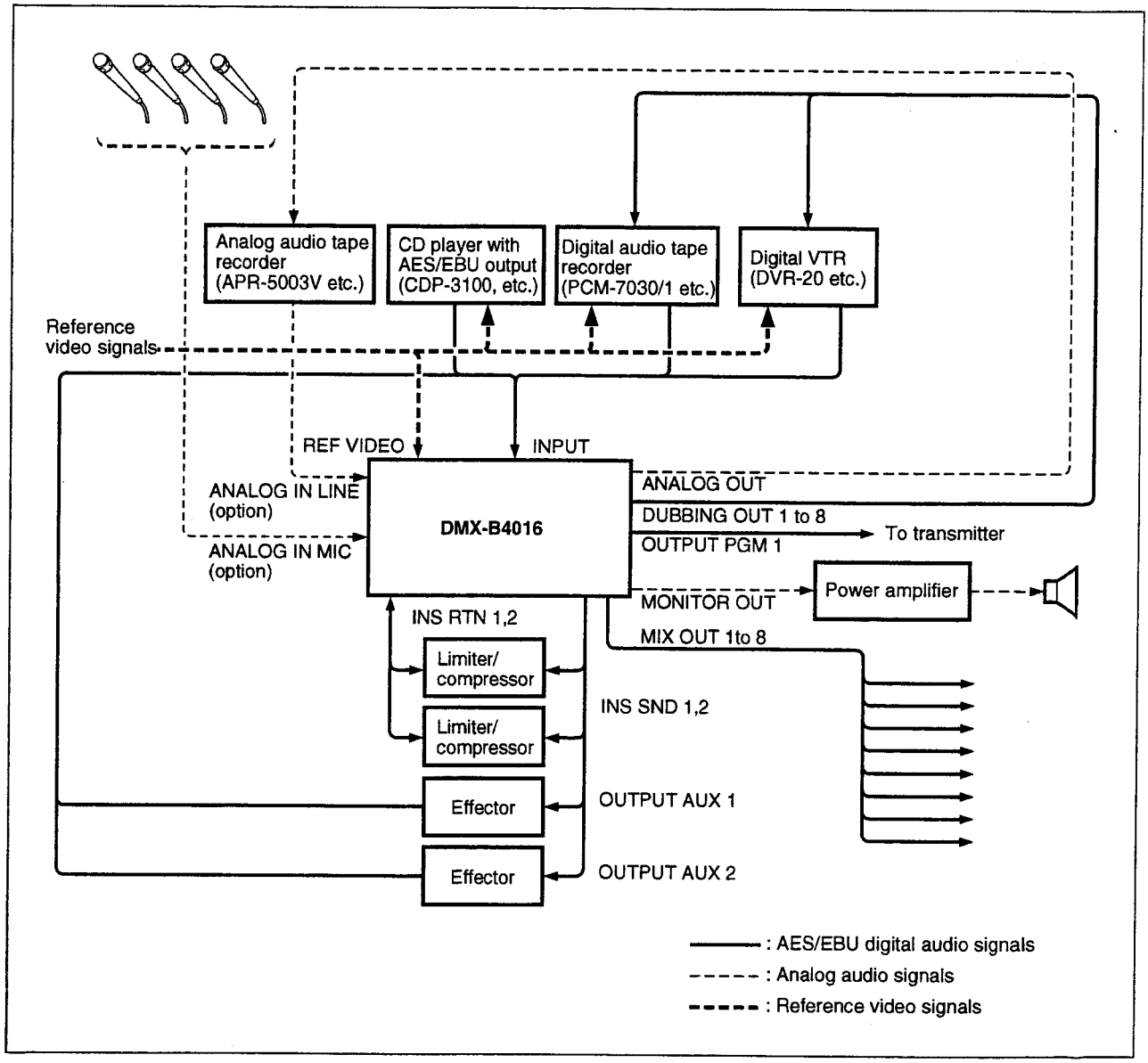
⑪ INPUT connectors (XLR 3-pin)
Input AES/EBU digital audio signals. One stereo signal may be input to each of the 30 connectors. Of the input signals, 16 may be assigned to the 16 console input channels.

⑫ REF (reference) VIDEO connectors (BNC)
Input NTSC or PAL reference video signals. The two connectors form a loop-through connection. Unless you are passing the input signals to other equipment, always terminate the empty connector with the supplied terminator for the REF VIDEO connector.

⑬ REF WORD (reference word sync) IN/OUT connectors (BNC)
Input reference word sync signals to the REF WORD IN connector. Connect reference word sync signals output from the REF WORD OUT connector to the console PROCESSOR WORD connector.

⑭ DI SYNC connector (XLR 3-pin)
Input reference AES/EBU digital audio signals.

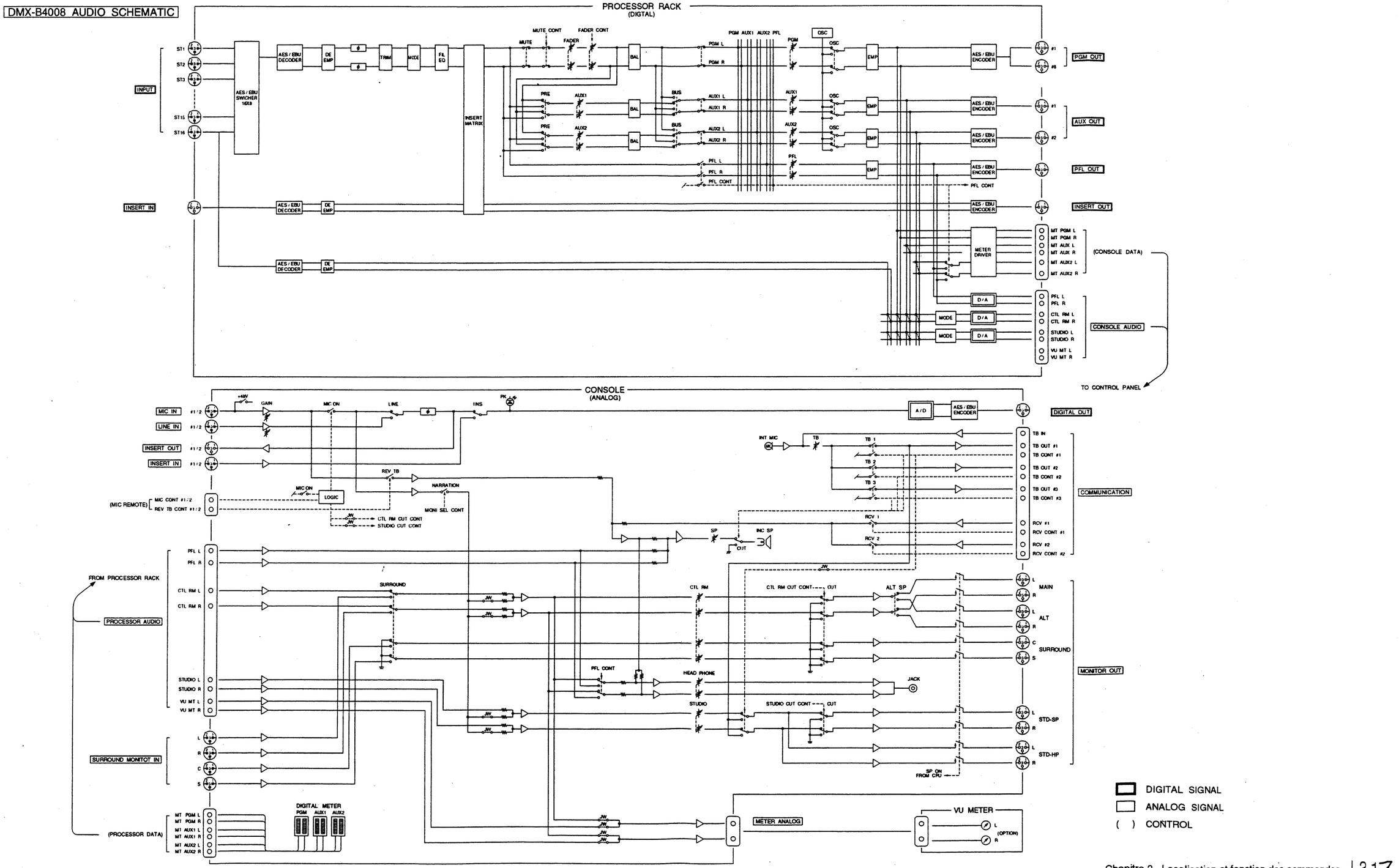
2-5-2 Flow of Audio Signals in a DMX-B4016 System



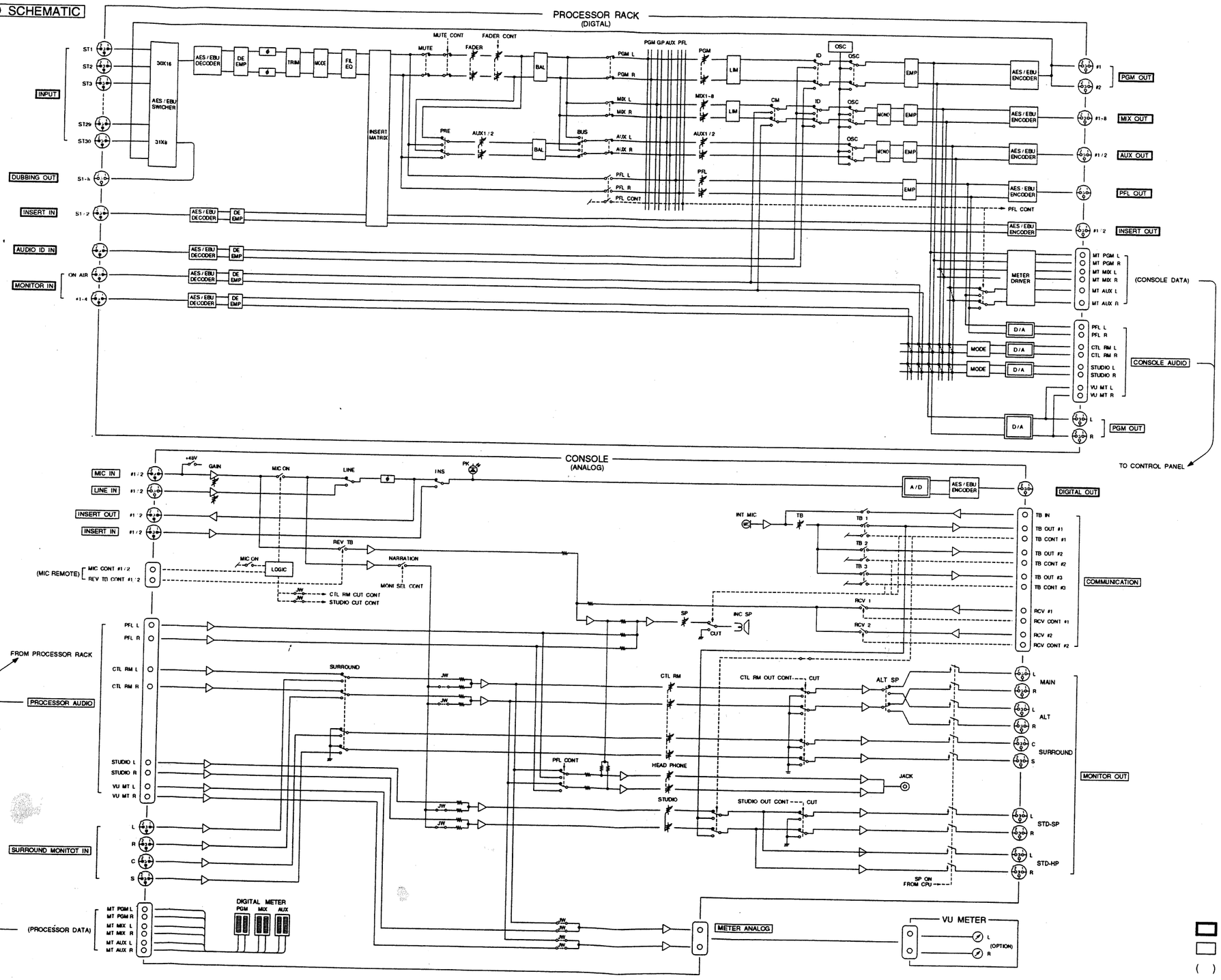
Flow of audio signals in a DMX-B4016 system

2-4 Fluence Interne

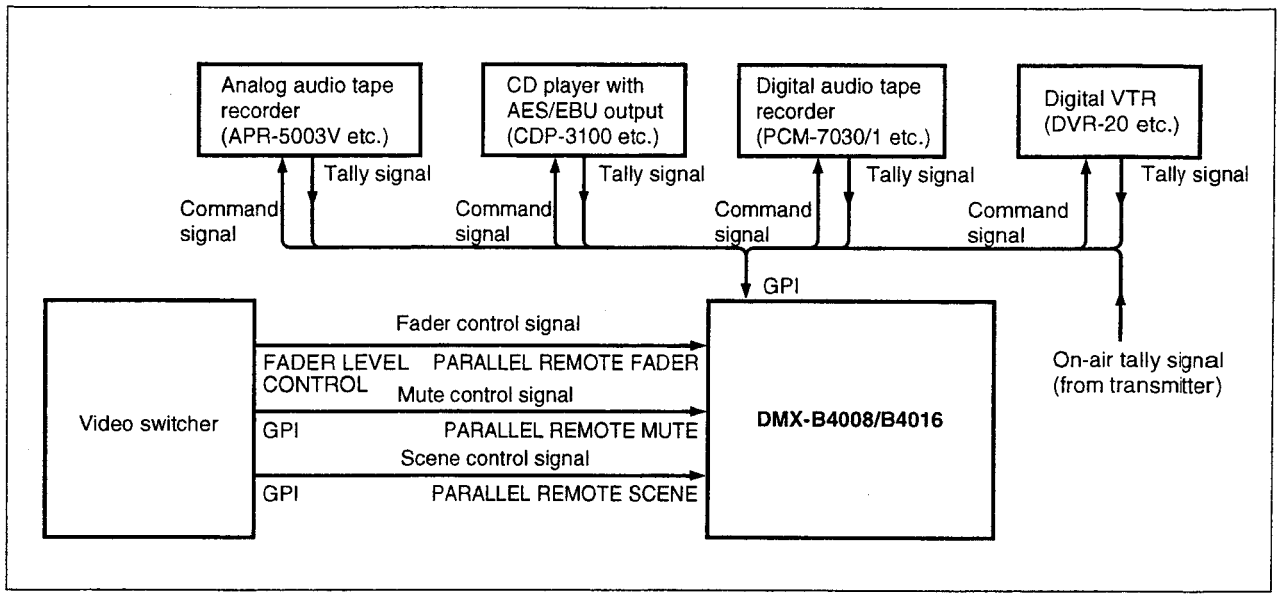
La fluence interne de cet appareil est comme suit.



DMX-B4016 AUDIO SCHEMATIC



2-5-3 Flow of Remote Control Signals in a DMX-B4008/B4016 System



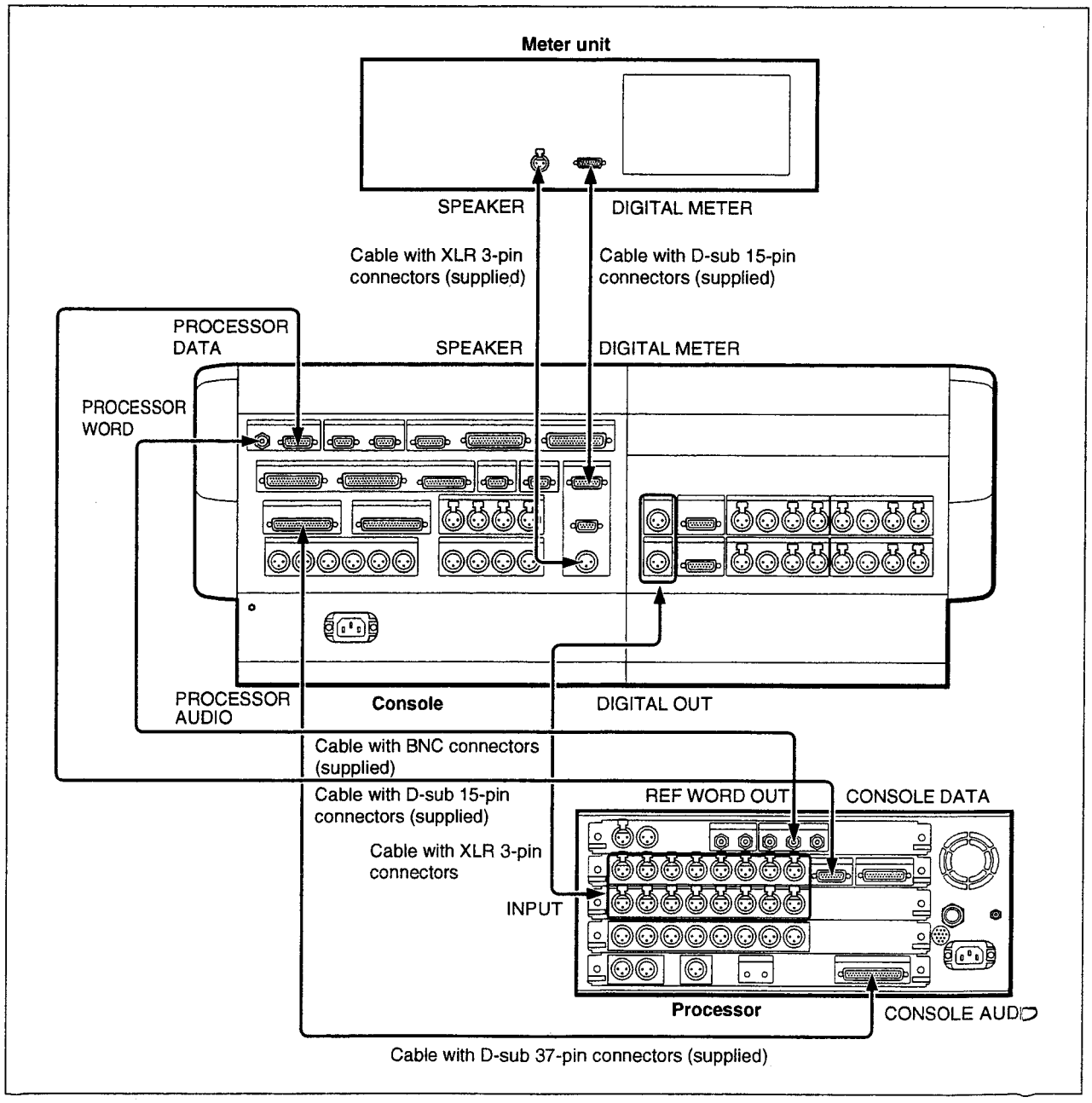
Flow of remote control signals in a DMX-B4008/B4016 system

2-6 Connections

Note on connecting units and AES/EBU signals

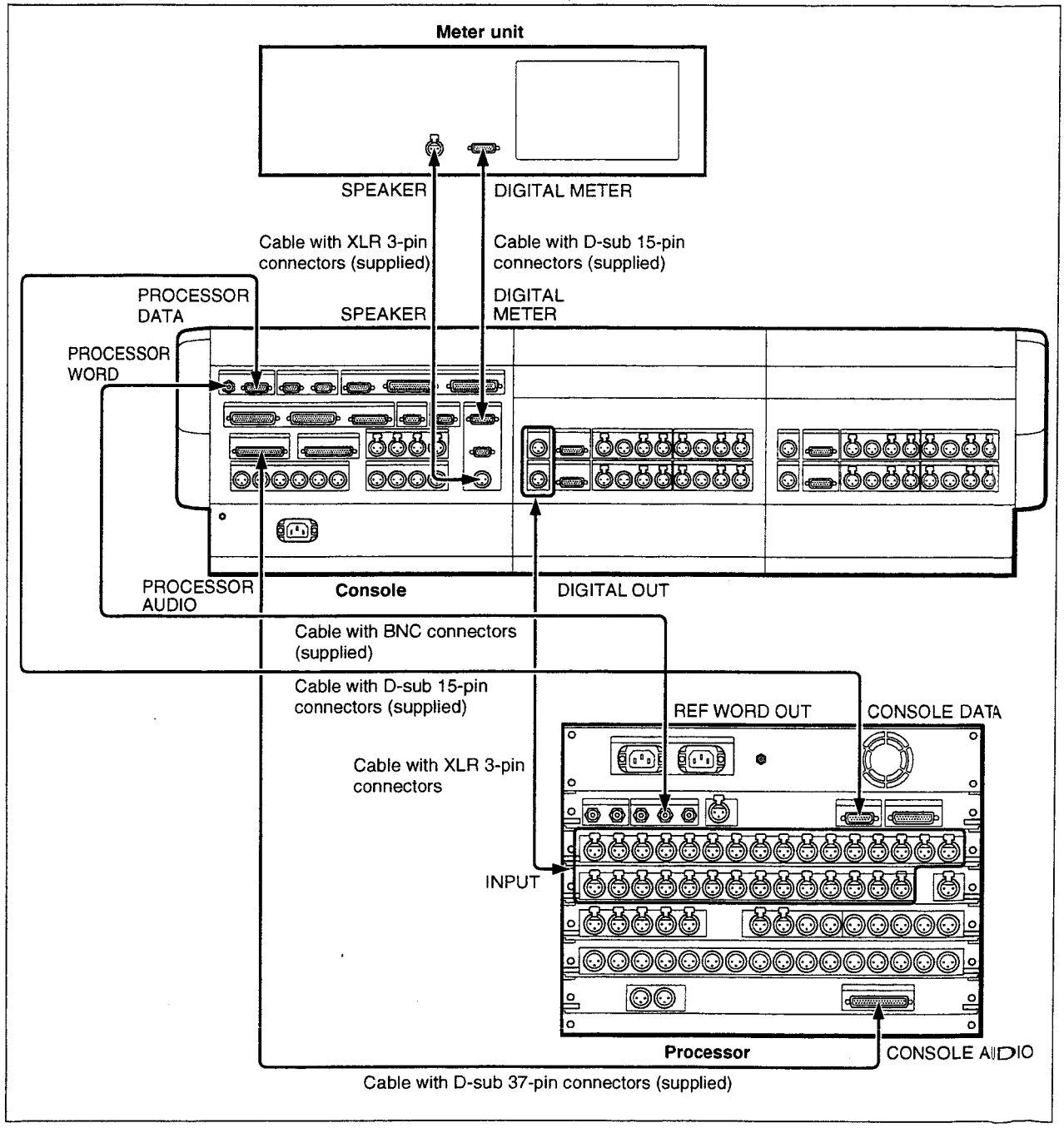
Use the supplied cables to connect the units in the system, and digital signal cables to connect AES/EBU audio signals. Use of microphone or other cables may result in signal errors.

2-6-1 Unit Connections (DMX-B4008)



Unit connections (DMX-B4008)

2-6-2 Unit Connections (DMX-B4016)



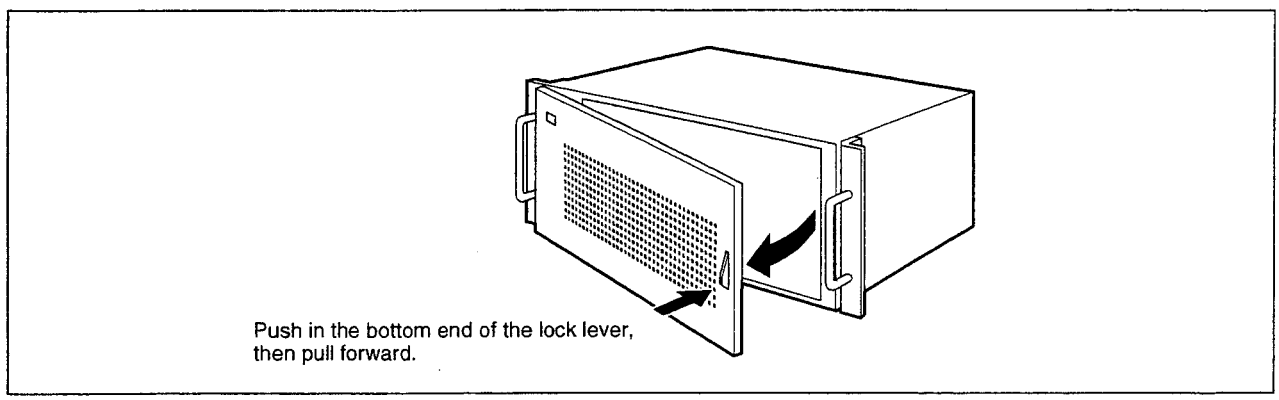
Unit connections (DMX-B4016)

2-7 Power-on Procedure

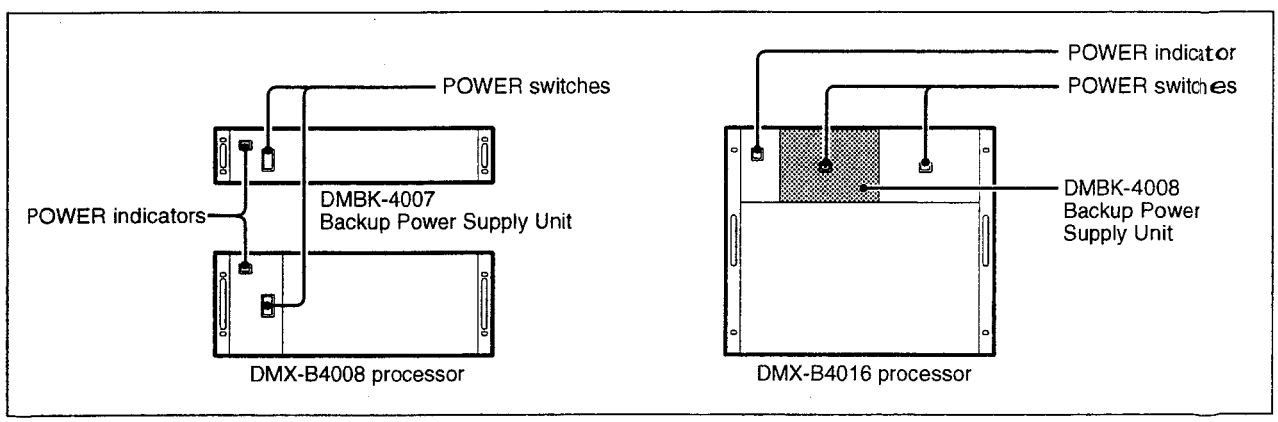
Notes

- Always power the unit on in the order processor → console.
- When using the DMBK-4007 Backup Power Supply Unit with the DMX-B4008, turn the backup power switch on within three seconds after turning on the processor power.
- If a backup power supply is installed in the console or DMX-B4016 processor, turn the second power switch on within three seconds after turning on the first.
- If you power the unit on after leaving the power off for more than two minutes, the unit performs self-diagnostics of the processor. In this case, it takes a few minutes until the unit starts to operate.

Processor

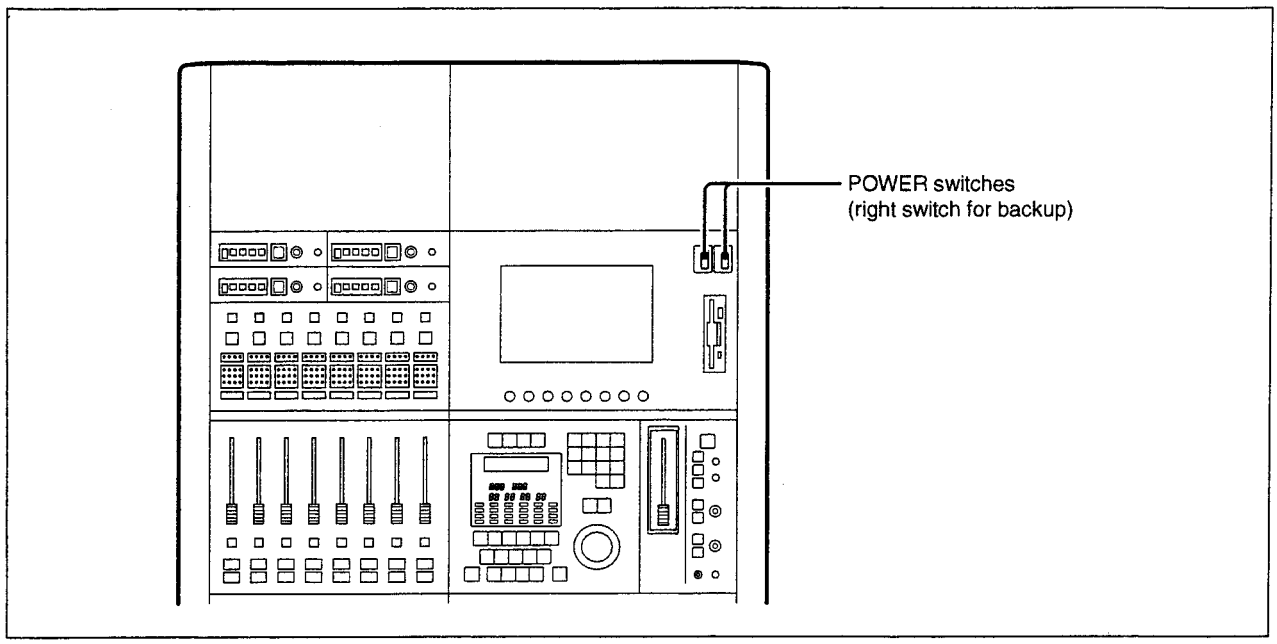


Opening the front panel



Processor power-on

Console



Console power-on

Chapter 3
Operation

This chapter describes operating procedures, concentrating particularly on the setup screens.

3-1 On-air Operations 3-2
3-2 Setup Operations 3-4
3-2-1 Using the Setup Screens 3-4
3-2-2 Logging into the System 3-7
3-2-3 Making Audio Signal Settings (AUDIO Screen) 3-9
3-2-4 Registering and Recalling Console Settings (SCENE Screen) 3-35
3-2-5 Disk Operations (DISK Screen) 3-37
3-2-6 Configuring the System (CONFIG Screen) 3-42

3-1 On-air Operations

The basic flow of on-air operations is as follows.

Call up console settings for the program using the SCENE screen.

↓

Adjust microphone input level using the GAIN selector of the 20Bit Mic/Line Input Module.

↓

Using the channel fader, adjust the audio level of the channel to which input from the microphone has been assigned.

↓

Cue up CD players, DAT and other audio devices.

↓

Using the channel faders, adjust the audio level of channels assigned to audio equipment.

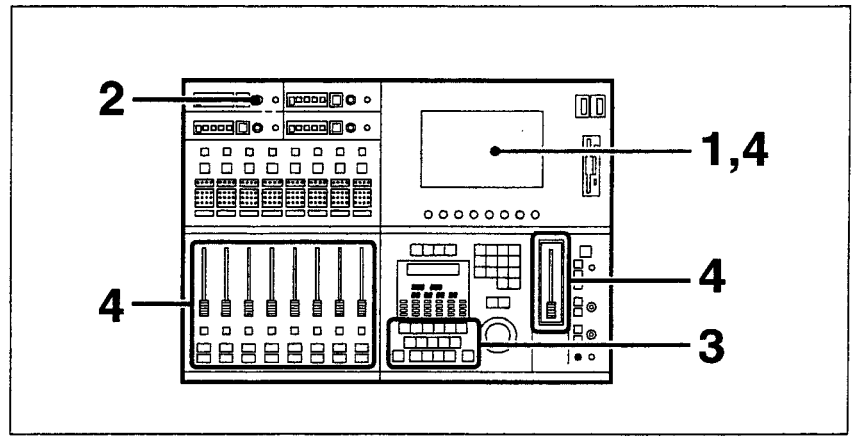
↓

Begin on-air broadcasting.

On-air operating procedure

Carry out on-air operations as follows.

For details regarding use of the setup screens, see Section 3-2-1 "Using the Setup Screens" (page 3-4).



On-air operating procedure

1 In the LOG IN screen, press your user name button. When the screen changes to the AUDIO screen, select the console settings to be used in the program by pressing the following buttons in this order:
SCENE button → TITLE button of the scene to be used → SET button

2 Adjust the microphone gain with the GAIN selector on the 20Bit Mic/Line Input Module.

3 Cue up tapes and other audio materials using the machine controller on the control panel or the remote controller of external audio equipment.

For details about operation of the machine controller, see the supplement to this manual which will be issued when the machine controller is available.

4 Carry out on-air operations using the master fader, channel faders, and the buttons in the channel operation blocks. Set filters and equalizers as necessary, using the CHANNEL screen.

For details about CHANNEL screen settings, see "CHANNEL screen" (page 3-21).

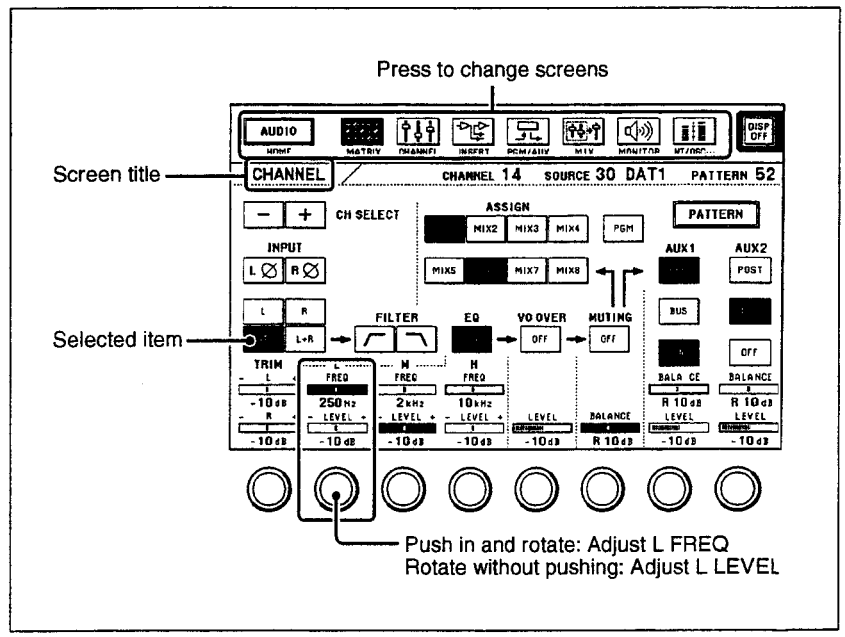
3-2 Setup Operations

3-2-1 Using the Setup Screens

Common operations

This section describes operations which are common to most of the setup screens.

- Button operations
- Parameter adjustment knob operations
- Keyboard input



Setup menu operations

Button operations

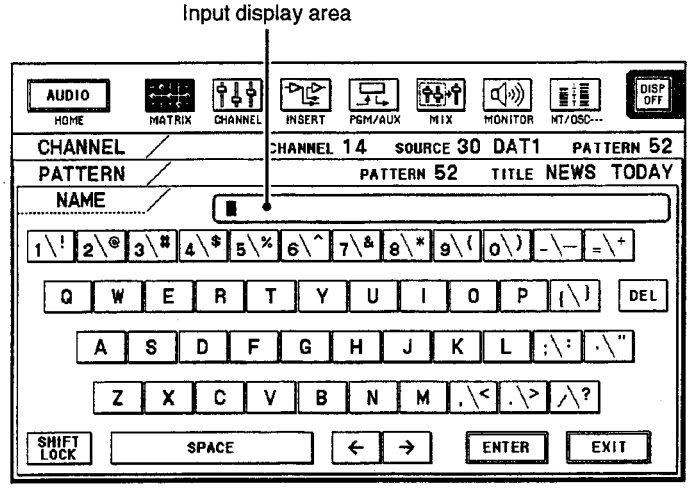
To select an item on the screen, press the button or icon which represents it. Depending on the type of button, another screen may appear or the item may be highlighted in reverse video to indicate that it is selected. When you press a highlighted item, the selection is canceled and the item returns to normal video. For example, the ST button in the screen above is selected, along with EQ, MIX1, MIX6 and the other highlighted buttons.

The icons in the top row and the PATTERN and AUDIO buttons are screen selection buttons. When pressed they call up another setup screen. If there are two lines in the screen title, the top line indicates the name of the parent screen.

Parameter adjustment knob operations

You can make parameter adjustments by pressing the relevant button to highlight it, and then rotating the parameter adjustment knob below the button. When there are two items for the knob, as in the example on the previous page, rotate the knob while pressing it to adjust the top item, and rotate without pressing to adjust the bottom one. The item affected by the adjustment is highlighted.

Keyboard input (NAME screen)



Keyboard input

On-screen keyboard

Press the keys in the on-screen keyboard to enter data in the input display area. If the input string has a maximum length, input beyond the maximum length is ignored.

SHIFT LOCK key

Press to toggle between lowercase and uppercase input. The SHIFT LOCK key is highlighted during uppercase input.

Cursor keys

The ← and → keys move the cursor to the left and right in the input display area.

DEL key

The DEL key deletes the letter to the left of the cursor.

ENTER key

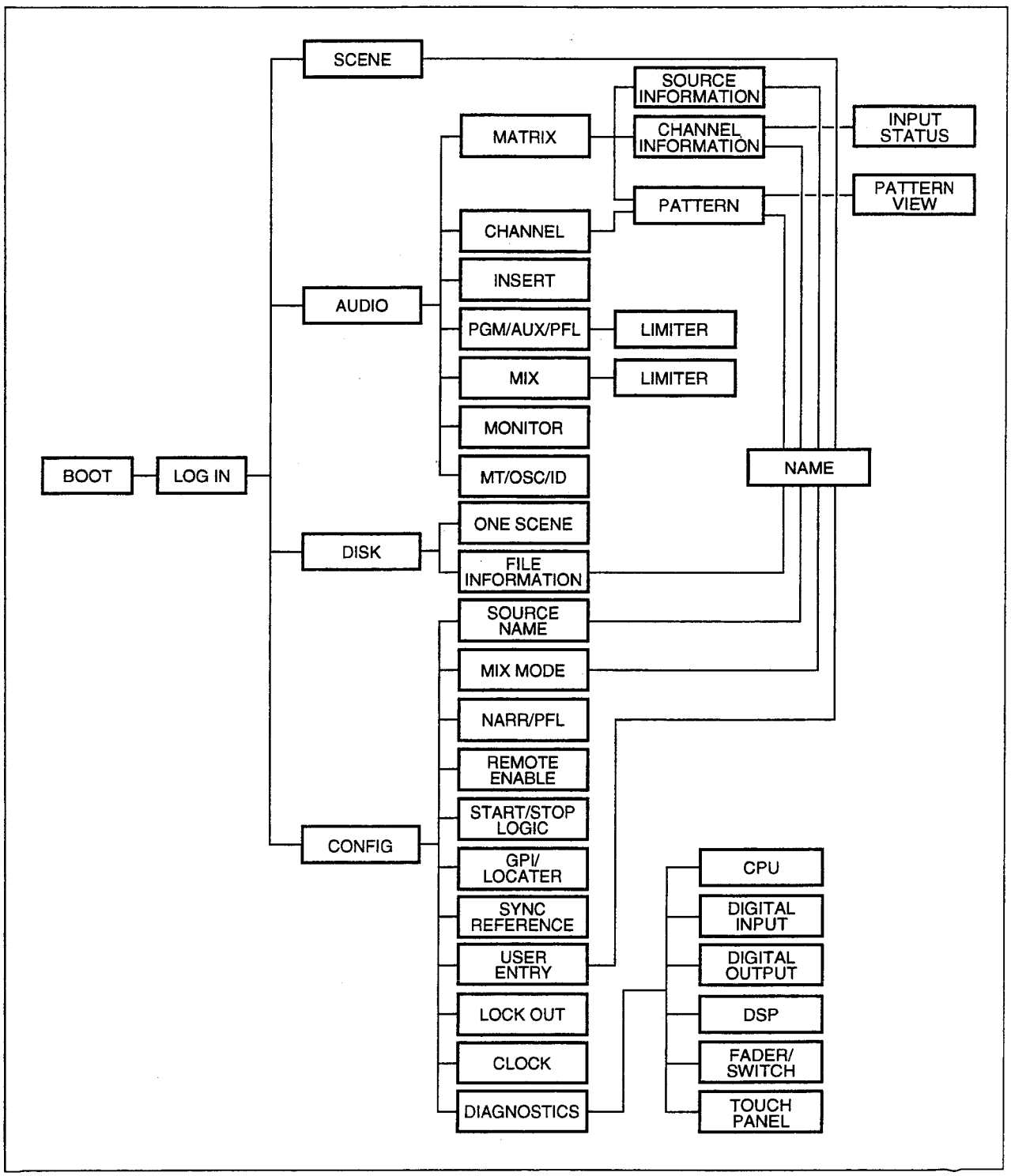
The ENTER key confirms the string in the input display area.

EXIT key

The EXIT key cancels the input string and returns to the parent screen without affecting the contents of the parent screen.

Setup screen hierarchy

The setup screens are structured as follows.



Setup screen hierarchy

3-2-2 Logging into the System

The rest of this chapter will describe the various screens in the setup menu. In section subtitles, the path given in parentheses after the screen name shows the position of the screen with respect to the LOG IN screen.

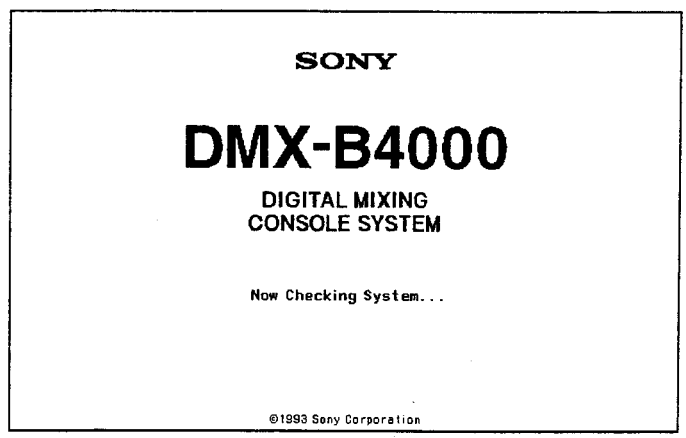
Note

The screens shown here are those of the DMX-B4016. Some functions are not provided by the DMX-B4008, and some buttons do not appear in DMX-B4008 screens.

BOOT screen

The BOOT screen appears when the unit is powered on. After carrying out self-diagnostics of the processor for a few minutes, it is replaced by the LOG IN screen. If an error is detected, the corresponding error message appears.

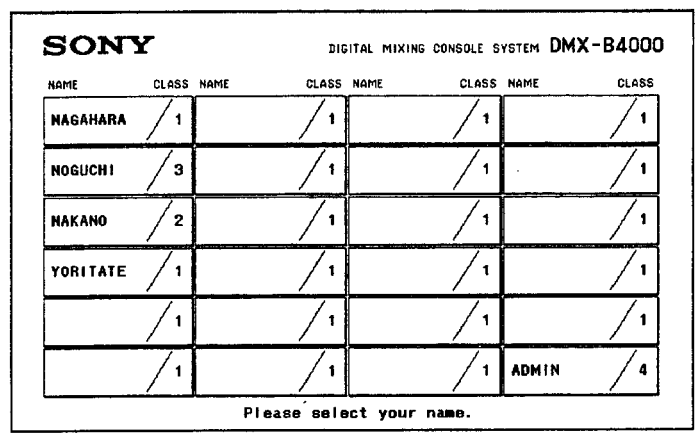
For details about error messages which appear in this screen, refer to the maintenance manual.



BOOT screen

LOG IN screen

The LOG IN screen displays the names of system users. When a name button is pressed, the AUDIO screen appears. The numbers to the right of user names indicate user levels. To enter or change user names, use the USER ENTRY screen *(page 3-55)*, located under the CONFIG screen. The button in the bottom right corner is reserved for the user with user level 4.

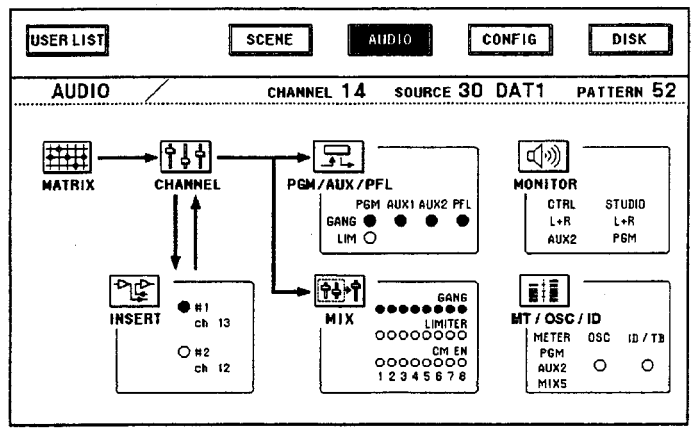


LOG IN screen

3-2-3 Making Audio Signal Settings (AUDIO Screen)

The screens below the AUDIO screen allow you to make various settings related to audio signals.

AUDIO screen (LOG IN → AUDIO)



AUDIO screen

Moving one level up (USER LIST)

Press the USER LIST button in the upper left corner of the screen to return to the LOG IN screen.

Moving to another screen on the same level (SCENE, CONFIG, DISK)

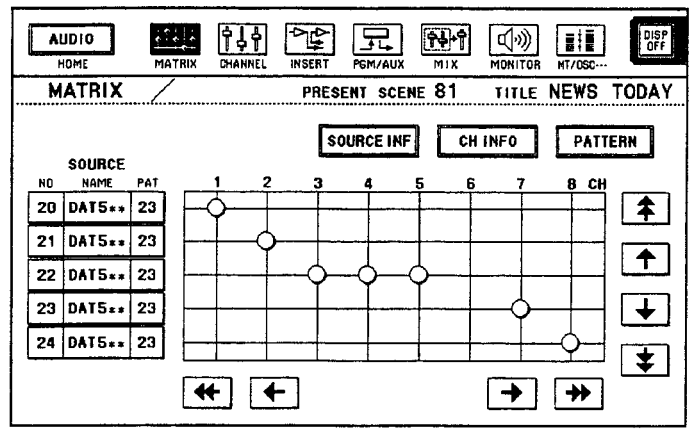
Press the SCENE, CONFIG, or DISK button at the top of the screen to move to that screen.

Moving one level down (MATRIX, CHANNEL, PGM/AUX/PFL, MONITOR, INSERT, MIX, MT/OSC/ID)

Press the MATRIX, CHANNEL, PGM/AUX/PFL, MONITOR, INSERT, MIX (DMX-B4016 only), or MT/OSC/ID (OSC in the DMX-B4008) icon to move to that screen.

MATRIX screen (LOG IN → AUDIO → MATRIX)

The MATRIX screen allows you to assign source signals to each of the channels on this unit. This screen is parent to the SOURCE INFORMATION, CHANNEL INFORMATION and PATTERN screens.



MATRIX screen

Common operations in lower-level AUDIO screens

The following operations may be used on any of the screens below the AUDIO screen.

- **Returning to the AUDIO screen:** Press the AUDIO button in the upper left corner of the screen.
- **Changing to another screen:** Press the CHANNEL, INSERT, PGM/AUX, MIX, MONITOR, or MT/OSC icon at the top of the screen.
- **Turning the screen display off:** Press the DISP OFF button in the upper right corner of the screen. The screen goes blank. To turn the display back on, press any point on the screen.

Moving one level down (SOURCE INF, CH INFO, PATTERN)

Press the SOURCE INF, CH INFO or PATTERN button to move to the SOURCE INFORMATION *(page 3-13)*, CHANNEL INFORMATION *(page 3-14)* and PATTERN *(page 3-18)* screens. Before moving to the PATTERN screen, you must select the source signal for pattern assignment by highlighting the appropriate source signal button in the MATRIX screen.

Assigning a source signal to channels

Input connector numbers, source names and pattern numbers are shown on the left side of the MATRIX screen. Follow the horizontal line beginning just to the right of the source signal until it crosses the vertical line representing the available channels. The point where the two lines cross is the cross point. To assign a channel, press the cross point so that a circle appears. To cancel a channel assignment, press the circle so that it disappears. A single source can be assigned to multiple channels. However, multiple sources cannot be assigned to a single channel.

In the DMX-B4016, you can also assign a source signal to dubbing outputs. To assign a signal to dubbing outputs, press the right or left cursor button until DUB 1 to DUB 8 appear above the matrix, and select the desired cross points. DUB 1 to DUB 8 appear in the following positions.

Standard DMX-B4016: Between CH16 and CH1
DMX-B4016 with extended inputs: Between CH24 and CH1

Note

Noise may be heard momentarily on destination device of a dubbing output when you assign a signal to the dubbing output, or when you cancel a signal assignment to the dubbing output.

Automatic pattern setting

When you assign a source signal to a channel, any pattern which may have been set for that source (equalizer settings, filter settings, output bus settings and so on) is copied to the new channel automatically. However, channel settings do not change if the source pattern number is 00, indicating that no pattern has been set for that source.

Using the cursor buttons

Use the cursor buttons to scroll the source signal display and channel display.

- ↑, ↓ : Scroll the source signal display up or down one step.
- ↟, ↡ : Scroll the source signal display up or down five steps.
- ←, → : Scroll the channel display left or right one step (DMX-B4016 only).
- ↞, ↠ : Scroll the channel display left or right eight steps (DMX-B4016 only).

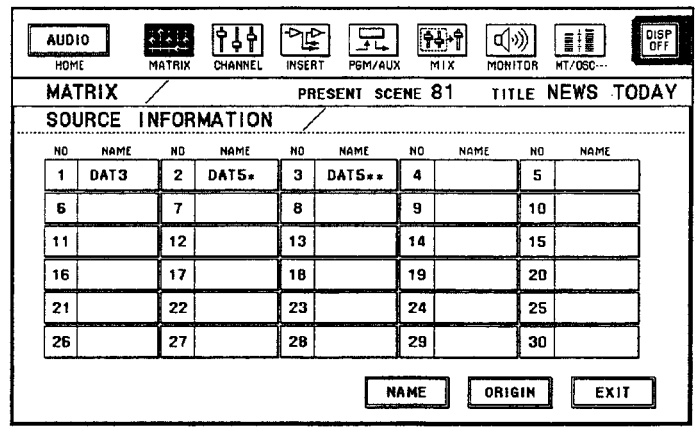
Source name symbols

The following information is conveyed by symbols in the source name display.

- **Four characters:** The source name which was input using the SOURCE INFORMATION screen.
- **Four characters followed by '*':** Origin information (source ID code added to AES/EBU signals by the source equipment).
- **----*:** The source signal is not assigned to any channel (DMX-B4008 only).
- **!!!!*:** The source signal does not contain origin information, or the origin information is invalid.
- **####*:** No source equipment is connected to the input connector, or there is no input signal from the source equipment.

SOURCE INFORMATION screen (LOG IN → AUDIO → MATRIX → SOURCE INFORMATION)

The SOURCE INFORMATION screen allows you to enter, change and check source names. The DMX-B4008 displays up to 16 source names in this screen.



SOURCE INFORMATION screen

Returning to the parent (MATRIX) screen (EXIT)

Press the EXIT button in the lower right corner.

Naming or renaming a source (NAME)

Press the button for that source, highlighting it. Then press the NAME button to call up the on-screen keyboard and enter a name consisting of up to four characters. Source names can also be assigned from the SOURCE NAME/VOICE OVER MASTER screen *(page 3-43)*. The name assigned last takes precedence.

For details about the on-screen keyboard, see page 3-5.

Using the origin information (source ID code added to AES/EBU signals by the source equipment) as the source name

Press the button for the source signal whose name is to be the origin information, highlighting it. Then press the NAME button to call up the on-screen keyboard, and enter the single character '*'.

Viewing the origin information of source signals (ORIGIN)

Press the ORIGIN button at the bottom of the screen, highlighting it. The origin information names replace the source names in the list. Press the ORIGIN button again, returning it to normal video, to return to the normal source name display.

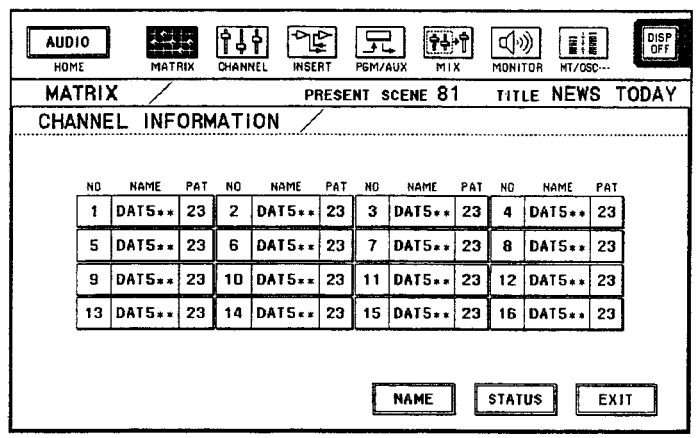
Symbols displayed when the ORIGIN button is highlighted

When the ORIGIN button is highlighted, symbols displayed have the following meanings.

- **name*:** A name followed by an asterisk (*) is the origin information (source ID code added to AES/EBU signals by source equipment).
- **----*:** The source signal is not assigned to any channel (DMX-B4008 only).
- **!!!!*:** The source signal does not contain origin information, or the origin information is invalid.
- **####*:** No source equipment is connected to the input connector, or there is no input signal from the source equipment.

CHANNEL INFORMATION screen (LOG IN → AUDIO → MATRIX → CHANNEL INFORMATION)

The CHANNEL INFORMATION screen allows you to enter, change and check channel names. The channel names registered here are displayed in the ID indicators on the channel operation panel. The DMX-B4008 displays up to eight channel names in this screen.



CHANNEL INFORMATION screen

Returning to the parent (MATRIX) screen (EXIT)

Press the EXIT button in the lower right corner.

Naming or renaming a channel (NAME)

To name or rename a channel, first press the button for that channel, highlighting it. Then press the NAME button and enter the name using the on-screen keyboard. The name can be up to four characters in length.

For details about the on-screen keyboard, see page 3-5.

Using the source name as the channel name

Press the button for the channel whose name is to be the source name, highlighting it. Then press the NAME button to call up the on-screen keyboard, and enter the single character '*'.

Viewing detailed information about the source assigned to a channel (STATUS)

Press the desired channel button, highlighting it, then press the STATUS button at the bottom of the screen. This calls up the INPUT STATUS screen *(page 3-16)*.

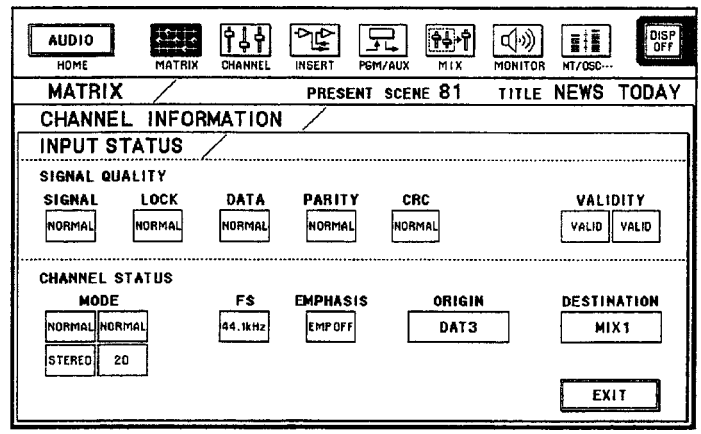
Channel name symbols

The following information is conveyed by symbols in the channel name display.

- **'*' after channel name:** The channel name is the same as the source name.
- **'**' after channel name:** The channel name is the same as the origin information.
- **----*:** No signal is assigned to the channel.
- **!!!!*:** The signal assigned to the channel does not contain origin information, or the origin information of the signal is invalid.
- **####*:** There is no input signal from the external equipment assigned to the channel.

INPUT STATUS screen (LOG IN → AUDIO → MATRIX → CHANNEL INFORMATION → INPUT STATUS)

The INPUT STATUS screen provides detailed information about the source signal assigned to the channel currently selected in the CHANNEL INFORMATION screen. This screen is read-only. None of the items can be changed here.



INPUT STATUS screen

The meanings of the items in the INPUT STATUS screen are as follows.

SIGNAL QUALITY area

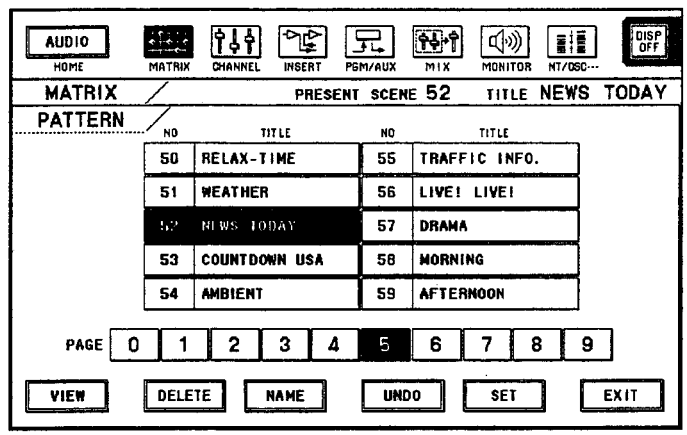
- **SIGNAL (AES/EBU input signals)**
  NORMAL: There is input of AES/EBU digital audio signals.
  NO SIG: There is no input of AES/EBU digital audio signals. When "NO SIG" is indicated, all boxes except for ORIGIN and DESTINATION show "INVALID".
- **LOCK (PLL lock status of digital input circuit)**
  NORMAL: Input signals are locked to the PLL (phase-locked loop) of the digital input circuit on this unit.
  ERROR: Input signals are not locked to the PLL.
- **DATA (data read status)**
  NORMAL: Input signals are being read correctly.
  SLIP: There was data dropout or duplication while reading input signals.
- **PARITY (parity error status)**
  NORMAL: No parity error
  ERROR: Parity error
- **CRC (CRC error status)**
  NORMAL: No CRC error
  ERROR: CRC error
- **VALIDITY (validity bit status)**
  VALID: D/A conversion of input signals is possible (VALIDITY bit is 0).
  INVALID: D/A conversion of input signals is impossible.

CHANNEL STATUS area

- **SIGNAL (AES/EBU input signals)**
- **MODE upper left (byte 0, bit 0)**
  NORMAL: Channel status is being used in professional mode.
  CONSUMER: Channel status is being used in consumer mode.
  When "CONSUMER" is indicated, all boxes from MODE lower left to EMPHASIS show "INVALID".
- **MODE upper right (byte 0, bit 1)**
  In professional mode:
  NORMAL: Audio signal is being input.
  NON AUDIO: Non-audio signal is being input.
  In consumer mode:
  NORMAL: Copy possible.
  COPY INH: Copy inhibited.
- **MODE lower left (channel mode)**
  NOT INDICATED: Channel mode not specified.
  2CH: Different signals in channel A and channel B
  STEREO: Stereo mode
  MONO: Signals in channel A only
- **MODE lower right (word length of digital audio signal)**
  20 to 24 (when the word length is less than 20 bits, "20" is highlighted in reverse video)
- **FS (sampling frequency)**
  44.1 kHz, 44.056 kHz, or 48 kHz. If the sampling frequency is other than these, "ERROR" is indicated.
- **EMPHASIS (emphasis status)**
  NOT INDICATED: Emphasis not specified.
  EMP ON: Emphasis applied.
  EMP OFF: Emphasis not applied.
  ERROR: None of the above.
- **ORIGIN (origin information)**
  Source ID code consisting of up to four characters added to AES/EBU signals by source equipment
- **DESTINATION (destination information)**
  Destination ID code consisting of up to four characters added to AES/EBU signals by source equipment

PATTERN screen (LOG IN → AUDIO → MATRIX → PATTERN)

In the setup screens of this unit, the term "pattern" refers to a variety of user-selected settings for audio signals, including equalizer settings, filter settings, output bus selections and so on. The PATTERN screen allows you to assign patterns to source signals. This is convenient because patterns are carried over automatically whenever the signals are assigned to a new channel.



PATTERN screen

Returning to the parent (MATRIX) screen (EXIT)

Press the EXIT button in the lower right corner.

Selecting a pattern (PAGE, TITLE)

You can register up to 99 patterns, numbered from 01 to 99 (pattern number 00 means no pattern specification). These patterns are divided into 10 pages, numbered from 0 to 9. To select a pattern, first press the PAGE button for that pattern, highlighting it. The 10 patterns in that page will be displayed. Next press the TITLE button of the desired pattern. The button is highlighted to indicate the selection.

Assigning a pattern to a source signal (SET)

After selecting a pattern, press the SET button. This assigns the pattern to the source signal currently selected (highlighted) in the MATRIX screen *(page 3-10)*. Note that you can also assign patterns using the PATTERN screen under the CHANNEL screen. The pattern assigned last takes precedence.

Checking the contents of a pattern (VIEW)

Select a pattern number and press the VIEW button. This calls up the PATTERN VIEW screen *(page 3-20)*.

Changing the pattern name (NAME)

Select a pattern number and press the NAME button at the bottom of the screen. Then enter a name consisting of up to 16 characters using the on-screen keyboard.

For details about the on-screen keyboard, see page 3-5.

Deleting a pattern (DELETE)

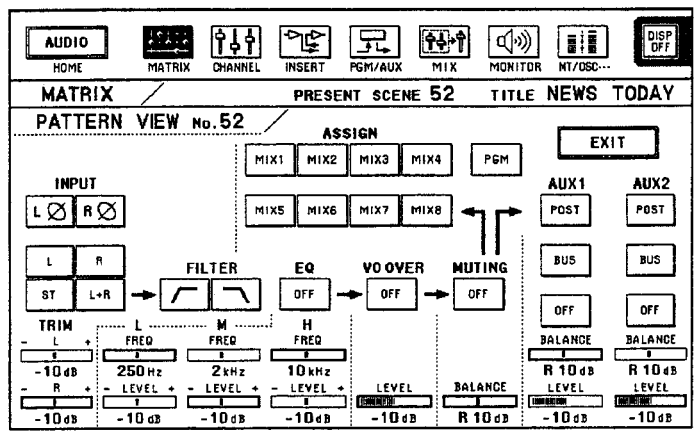
Select a pattern number and press the DELETE button. The pattern is deleted from pattern memory.

Undoing the immediately previous pattern operation (UNDO)

When you press the SET, DELETE or NAME button, the UNDO button is automatically highlighted. While it is highlighted, you can press it to undo the immediately previous operation. However, pressing the UNDO button when it is not highlighted has no effect.

PATTERN VIEW screen (LOG IN → AUDIO → MATRIX → PATTERN → PATTERN VIEW)

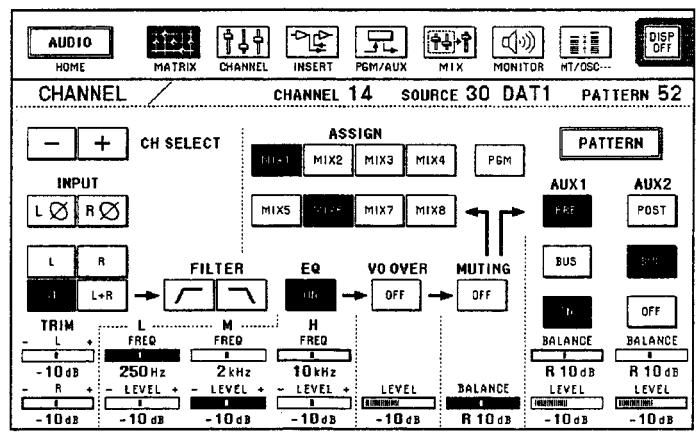
Pressing the VIEW button after selecting a pattern in the PATTERN screen calls up the PATTERN VIEW screen. This screen allows you to check the contents of the selected pattern. Note that this screen is read-only. To change the settings displayed here, use the CHANNEL screen *(see the next page)*.
After checking the contents, press the EXIT button to return to the PATTERN screen.



PATTERN VIEW screen

CHANNEL screen (LOG IN → AUDIO → CHANNEL)

Pressing the CHANNEL icon in the AUDIO screen, or pressing the ACCESS button on the console calls up the CHANNEL screen. This screen allows you to activate filters and equalizers, make mute settings, select output buses, and make various other settings related to the audio signals on a channel.



CHANNEL screen

Changing channels (–, +)

The + button increments the channel, and the – button decrements it. You can also change channels by pressing the ACCESS button on the console. The button pressed last takes precedence.

Registering a pattern (PATTERN)

Press the PATTERN button to call up the PATTERN screen *(page 3-25)*. You can use the PATTERN screen to register the settings made in this screen in pattern memory.

Changing the input channel mode (L, R, ST, L+R)

Press one of the following buttons, highlighting it.

L: Left audio in both channels
R: Right audio in both channels
ST: Stereo
L+R: Left and right mixed audio

Inverting the phase (LØ, RØ)

Press the LØ and RØ buttons, highlighting them, to invert the phase of the left and right channels.

LØ: Left channel phase
RØ: Right channel phase

Making fine adjustments to input gain (TRIM)

Adjust input gain by rotating parameter adjustment knob 1. The highlighted indicator shows the channel affected by the adjustment.

TRIM L: Press and rotate the knob to adjust left channel gain.

TRIM R: Rotate the knob without pressing to adjust right channel gain.

Activating a filter (⌐, ¬)

Pressing these buttons toggles them on (highlighted) and off (normal video). The filter is activated when the button is highlighted.

⌐: Low-cut filter

¬: High-cut filter

Activating an equalizer (EQ)

Pressing the EQ button toggles it on (highlighted) and off (normal video). While it is on, you can adjust the cut-off frequency and the signal level around it for three frequency ranges by rotating parameter adjustment knobs 2, 3 and 4. Highlighted sliders show the items affected by the adjustments.

- **Low range (L)**
  Cut-off frequency: Adjust the L FREQ slider by pressing and rotating parameter adjustment knob 2.
  Level: Adjust the L LEVEL slider by rotating parameter adjustment knob 2.
- **Middle range (M)**
  Cut-off frequency: Adjust the M FREQ slider by pressing and rotating parameter adjustment knob 3.
  Level: Adjust the M LEVEL slider by rotating parameter adjustment knob 3.
- **High range (H)**
  Cut-off frequency: Adjust the H FREQ slider by pressing and rotating parameter adjustment knob 4.
  Level: Adjust the H LEVEL slider by rotating parameter adjustment knob 4.

Making the channel a voice over slave (VO OVER)

You may want to automatically lower the output level of a certain source whenever there is input from another source. For example, it is common to lower the level of background music whenever there is input from a microphone. This function is called voice over. A voice over slave signal is a signal, such as background music, which automatically decreases in volume whenever it coincides with voice over master signals.

Pressing the VO OVER button toggles it on (highlighted) and off (normal video). While it is on, the channel is treated as a voice over slave. In this state, raising the fader of a master signal lowers the output level of the channel. You can use parameter adjustment knob 5 to choose the offset, or amount to subtract from the normal output level when the voice over function is activated. Note that this offset is always subtracted during voice over, even while you are using a channel fader to adjust the output level manually. To designate voice over master signals, use the SOURCE NAME/VOICE OVER MASTER screen *(page 3-43)* under the CONFIG screen.

Muting the output (MUTE)

Pressing the MUTING button toggles it on (highlighted) and off (normal video). While it is on, audio output from this channel is muted. Pressing the MUTE button on the console also toggles muting on and off. The button pressed last takes precedence.

Adjusting the left/right balance

Rotate parameter adjustment knob 6 to adjust the left/right output balance.

Assigning channel signals to an output bus (ASSIGN)

Pressing one of the PGM or MIX1 to MIX8 (DMX-B4016 only) buttons toggles it on (highlighted) and off (normal video). When the button is on, the signals on the channel are assigned to the output bus corresponding to the button, and output from one of the PGM or MIX1 to MIX8 (DMX-B4016 only) connectors on the processor corresponding to the output bus. You can assign the same channel to multiple output buses.

Notes

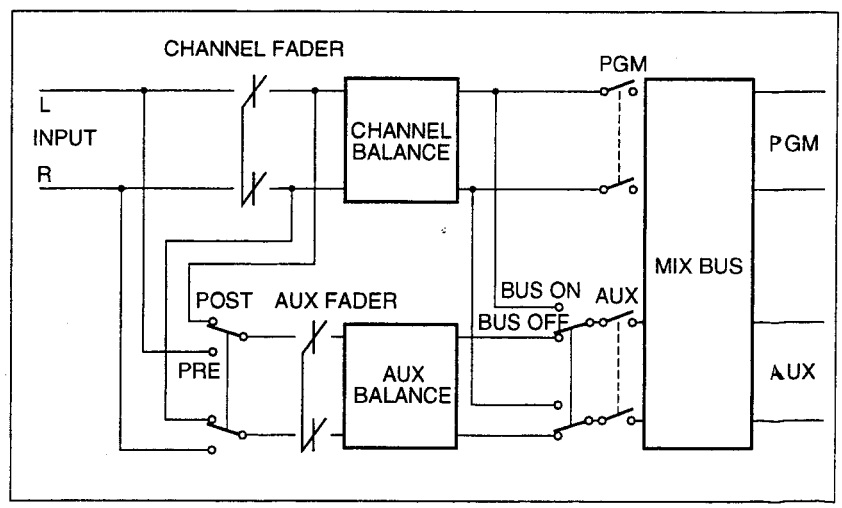
- When you change a MIX bus channel assignment, the output of that channel to all MIX buses is muted momentarily.
- If the output mode of the MIX bus *(see page 3-46)* is set to STEREO in a unit not equipped with DMBK-4011 Output Extension Kit, channel assignments to the MIX 5 to MIX 8 buses are invalid.

Assigning channel signals to an auxiliary output bus (AUX1, AUX2)

The AUX1 and AUX2 buttons assign channel signals to the output from AUX1 and AUX2 connectors. They also determine the point in the mixer circuits from which the signals are forwarded to the output bus.

- **POST/PRE button:** Pressing this button toggles it between "POST" and "PRE". If "POST" is indicated, signals are forwarded to the auxiliary bus after passing through the channel fader (postfader). If "PRE" is indicated, signals are forwarded to the auxiliary bus before passing through the channel fader (prefader). In either case, the signals always pass through the auxiliary fader and auxiliary balance circuits.
- **BUS button:** Pressing this button toggles it on (highlighted) and off (normal video). When it is highlighted, postfader signals are forwarded to the auxiliary bus without passing through auxiliary fader and auxiliary balance circuits, overriding the setting made with the POST/PRE button above. When the button is in normal video, the unit uses the setting made with the POST/PRE button.
- **ON/OFF button:** Pressing this button toggles it on (highlighted) and off (normal video). When the button is on, channel signals are assigned to the auxiliary bus, and when off, not assigned.

The following block diagram shows the output points to the auxiliary bus, as set by the buttons in the AUX1 and AUX2 groups.



Output points to the auxiliary bus

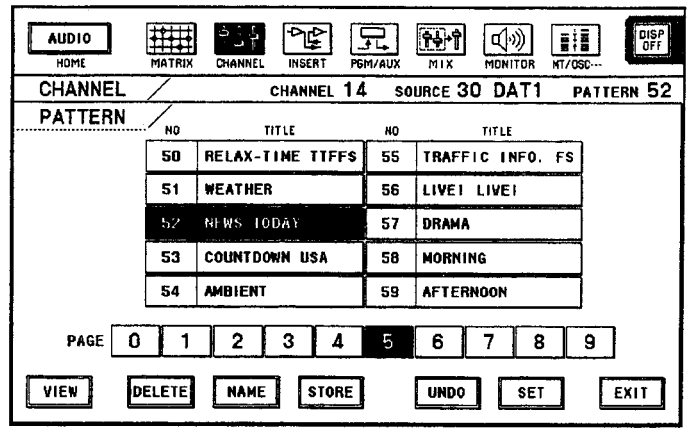
Adjusting the left/right balance and output level from the AUX connectors (BALANCE, LEVEL)

- **Adjusting the left/right balance:** Press and rotate parameter adjustment knobs 7 and 8.
- **Adjusting the output level:** Rotate parameter adjustment knobs 7 and 8.

PATTERN screen (LOG IN → AUDIO → CHANNEL → PATTERN)

This PATTERN screen is similar to the PATTERN screen under the MATRIX screen, with the following differences.

- This screen has a STORE button, which allows you to register the patterns.
- When you press the SET button, the pattern is assigned to a channel instead of to a source signal.



PATTERN screen

Returning to the parent (CHANNEL) screen (EXIT)

Press the EXIT button in the lower right corner.

Selecting a pattern (PAGE, TITLE)

You can register up to 99 patterns, numbered from 01 to 99 (pattern number 00 means no pattern specification). These patterns are divided into 10 pages, numbered from 0 to 9. To select a pattern, first press the PAGE button for that pattern, highlighting it. The 10 patterns in that page will be displayed. Next press the TITLE button of the desired pattern. The button is highlighted to indicate the selection.

Assigning a pattern to a channel (SET)

After selecting a pattern, press the SET button. The pattern is assigned to the channel on which settings are currently made in the CHANNEL screen *(page 3-21)*. Note that you can also assign patterns using the PATTERN screen under the MATRIX screen. If you assign patterns to the same signal here and under the MATRIX screen, the pattern assigned last takes precedence.

Checking the contents of a pattern (VIEW)

Select a pattern number and press the VIEW button. This calls up the PATTERN VIEW screen *(page 3-20)*.

Naming or renaming a pattern (NAME)

Select a pattern and press the NAME button at the bottom of the screen. Then enter a name consisting of up to 16 characters using the on-screen keyboard.

For details about the on-screen keyboard, see page 3-5.

Registering a pattern (STORE)

Select a pattern and press the STORE button. The pattern specified in the CHANNEL screen *(page 3-21)* is registered in pattern memory. If you have not specified a pattern name, the pattern is registered as "#n", where n is the pattern number.

Deleting a pattern (DELETE)

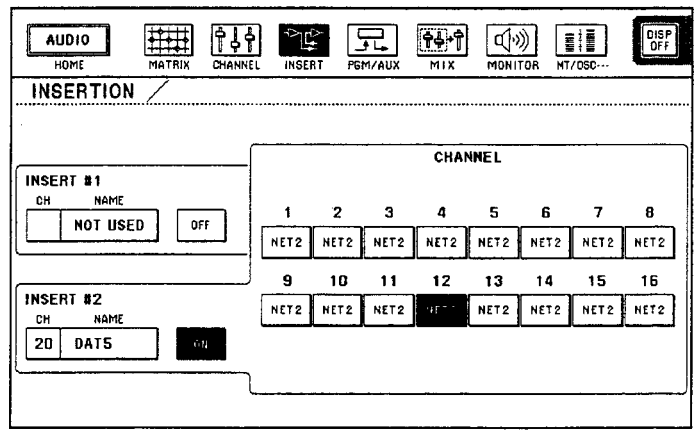
Select a pattern number and press the DELETE button. The pattern is deleted from pattern memory.

Undoing the immediately previous pattern operation (UNDO)

When you press the SET, DELETE, NAME or STORE button, the UNDO button is automatically highlighted. While it is highlighted, you can press it to undo the immediately previous operation. However, pressing the UNDO button when it is not highlighted has no effect.

INSERTION screen (LOG IN → AUDIO → INSERTION)

Pressing the INSERT icon in the AUDIO screen calls up the INSERTION screen. This screen allows you to select signals for output to an external effector via the INS SND connector. The effector returns the signals to this unit via the INS RTN connector. The DMX-B4008 INSERTION screen shows only one INSERT display panel, and only eight channels.



INSERTION screen

Enabling an insertion circuit (INSERT)

Press the NAME button under the "INSERT #1" or "INSERT #2" indication to enable selection with the CHANNEL selection buttons.

- **If the circuit is not in use:** The CH indicator shows nothing, and "NOT USED" appears in the NAME indicator. A channel number and name will appear when you select a channel with the CHANNEL selection buttons.
- **If the circuit is in use:** The channel selection button for the channel in use is highlighted, and the channel number and name appear in the CH and NAME indicators.

Turning the insertion circuit on or off (ON/OFF)

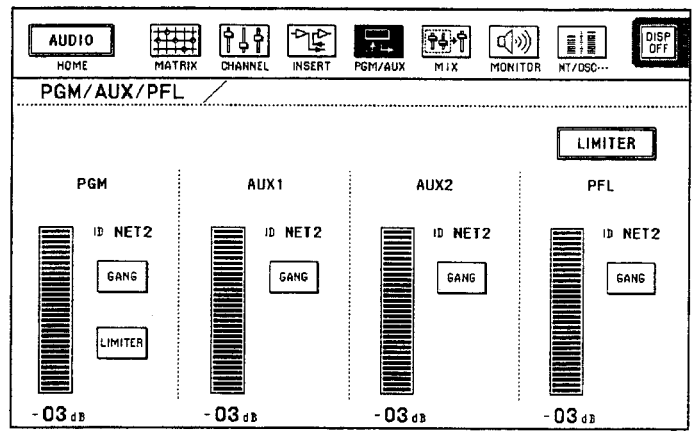
Press the ON/OFF button to toggle it on (highlighted) and off (normal video). When it is on, signals from the selected channel are sent to the external insertion circuit.

Selecting a channel (CHANNEL)

When you press one of the CHANNEL selection buttons, the button is highlighted and the channel number and name appear under the INSERT indication. Pressing a highlighted CHANNEL selection button returns it to normal video and causes "NOT USED" to appear in the NAME indicator. You cannot select more than one channel for output to an insertion circuit.

PGM/AUX/PFL screen (LOG IN → AUDIO → PGM/AUX)

Pressing the PGM/AUX/PFL icon in the AUDIO screen calls up the PGM/AUX/PFL screen. This screen allows you to adjust the output level for PGM, AUX1, AUX2 and PFL buses.



PGM/AUX/PFL screen

ID display

The destination ID set in the EMPHASIS/ID/OUTPUT MODE screen *(page 3-45)* is shown beneath the signal name.

Adjusting the output level (parameter adjustment knobs)

Rotate the following parameter adjustment knobs to adjust the output level for each bus. However, these adjustments do not affect the signals on a bus if the GANG button for that bus is highlighted.

- **Parameter adjustment knob 1:** PGM bus output level
- **Parameter adjustment knob 3:** AUX1 bus output level
- **Parameter adjustment knob 5:** AUX2 bus output level
- **Parameter adjustment knob 7:** PFL bus output level

Controlling the output level with the master fader (GANG)

Pressing the GANG button for each bus toggles it on (highlighted) and off (normal video). When it is on, the master fader on the console controls the signal level for that bus, regardless of settings made with parameter adjustment knobs in this screen. When the GANG button is off , settings made with parameter adjustment knobs take effect.

Using the limiter in the program bus (LIMITER) (DMX-B40/16 only)

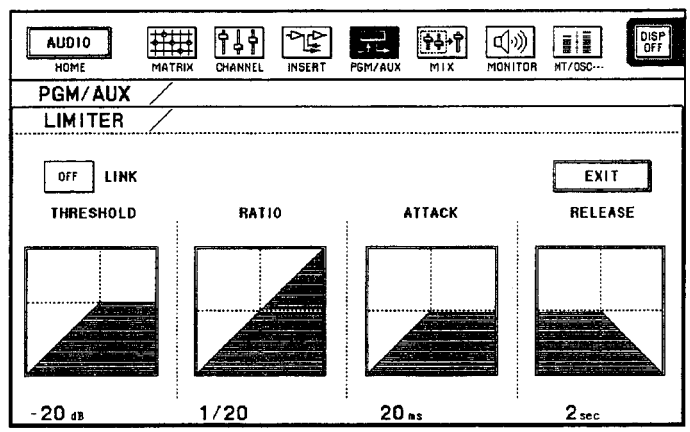
Pressing the LIMITER button in the PGM section toggles it on (highlighted) and off (normal video). When it is on, the limiter in the program bus is enabled.

Setting parameters for the limiter in the program bus (LIMITER) (DMX-B4016 only)

Press the LIMITER button to call up the LIMITER screen (next section).

LIMITER screen (LOG IN → AUDIO → PGM/AUX/PFL → LIMITER) (DMX-B4016 only)

Pressing the LIMITER button in the PGM/AUX/PFL screen calls up the LIMITER screen. This screen allows you to set parameters for the limiter in the program bus.



LIMITER screen

Returning to the parent (PGM/AUX/PFL) screen (EXIT)

Press the EXIT button.

Linking the left and right channels (LINK)

Pressing the button to the left of the LINK indication toggles it on (highlighted) and off (normal video). When it is on, the left and right channels are linked.

Adjusting the threshold level (THRESHOLD)

Adjust the threshold level by rotating parameter adjustment knob 1.

Adjusting the compression ratio (RATIO)

Adjust the compression ratio by rotating parameter adjustment knob 3.

Adjusting the attack time (ATTACK)

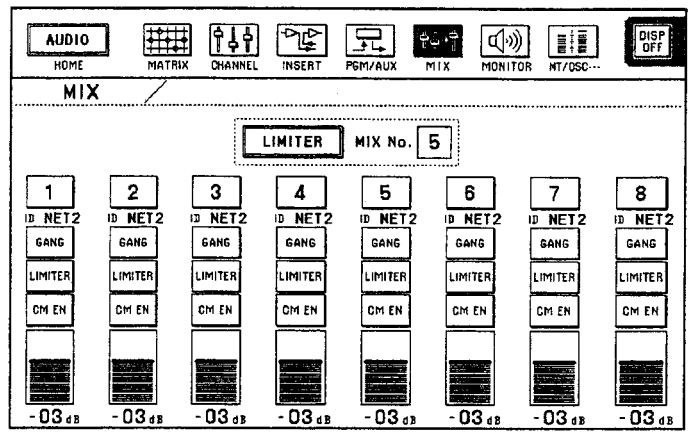
Adjust the attack time by rotating parameter adjustment knob 5.

Adjusting the release time (RELEASE)

Adjust the release time by rotating parameter adjustment knob 7.

MIX screen (LOG IN → AUDIO → MIX) (DMX-B4016 only)

Pressing the MIX icon in the AUDIO screen calls up the MIX screen. This screen allows you to make various settings for the mix buses.



MIX screen

ID display

The destination ID set in the EMPHASIS/ID/OUTPUT MODE screen *(page 3-45)* is shown beneath the bus number.

Adjusting the output level (parameter adjustment knobs)

Rotate parameter adjustment knobs 1 to 8 to adjust output levels for mix buses 1 to 8. Adjustments affect a bus only when the GANG button for that bus is off (normal video).

Controlling mix bus output level with the master fader (GANG)

Pressing the GANG button toggles it on (highlighted) and off (normal video). When it is on, the output level of that mix bus is controlled with the master fader, regardless of settings made with parameter adjustment knobs. To enable mix bus settings made with parameter adjustment knobs, turn the GANG button off .

Using the limiter in a mix bus (LIMITER)

Pressing the small LIMITER button under the bus number toggles it on (highlighted) and off (normal video). When it is on, the limiter in that mix bus is enabled.

Note

If the output mode of the MIX bus *(see page 3-46)* is set to STEREO in a unit not equipped with DMBK-4011 Output Extension Kit, nothing is output from the MIX 5 to MIX 8 buses.

Enabling CM interrupts (CM EN)

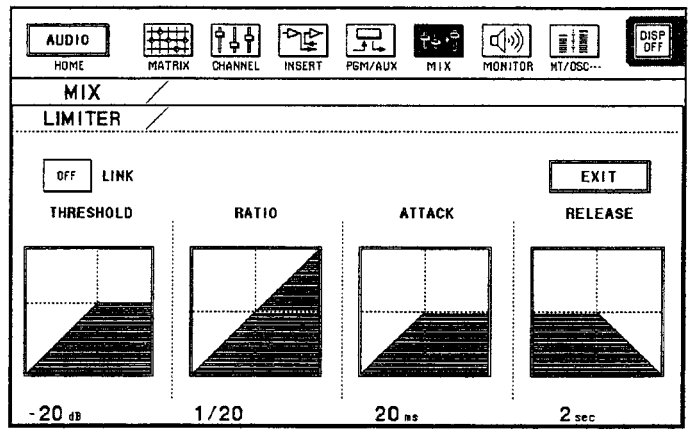
Pressing the CM EN button under the bus number toggles it on (highlighted) and off (normal video). When it is on, CM input to the mix bus is enabled in conjunction with the CM tally. To inhibit CM interrupts, turn the CM EN button off.

Setting parameters for the limiter in a mix bus (LIMITER)

Press the large LIMITER button at the center of the screen to call up the mix bus LIMITER screen. Before calling up the LIMITER screen, press the small LIMITER button under the bus number, highlighting it, to select the bus affected by the adjustments.

LIMITER screen (LOG IN → AUDIO →MIX → LIMITER) (DMX-B4016 only)

Pressing the LIMITER button in the MIX screen calls up the LIMITER screen. This screen allows you to set limiter parameters for the mix bus currently selected in the MIX screen.



LIMITER screen

Returning to the parent (MIX) screen (EXIT)

Press the EXIT button.

Linking the left and right channels (LINK)

Pressing the button to the left of the LINK indication toggles it on (highlighted) and off (normal video). When it is on, the left and right channels are linked.

Adjusting the threshold level (THRESHOLD)

Adjust the threshold level by rotating parameter adjustment knob 1.

Adjusting the compression ratio (RATIO)

Adjust the compression ratio by rotating parameter adjustment knob 3.

Adjusting the attack time (ATTACK)

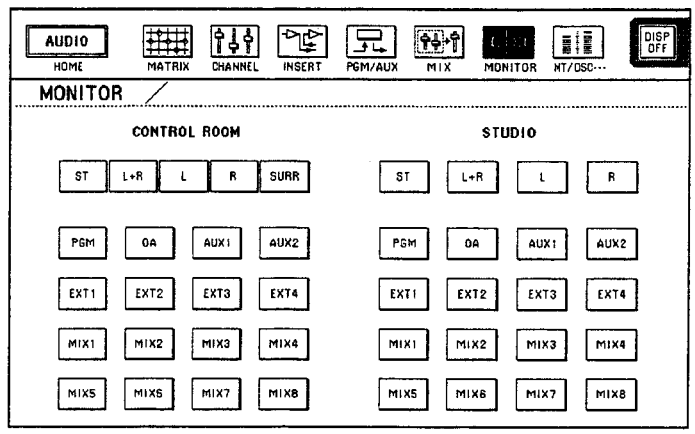
Adjust the attack time by rotating parameter adjustment knob 5.

Adjusting the release time (RELEASE)

Adjust the release time by rotating parameter adjustment knob 7.

MONITOR screen (LOG IN → AUDIO → MONITOR)

Pressing the MONITOR icon in the AUDIO screen calls up the MONITOR screen. This screen allows you to make settings related to monitor output. The DMX-B4008 MONITOR screen offers a choice of four monitor sources: PGM, AUX1, AUX2 and ST16.



MONITOR screen

Selecting the monitor mode

Press one of the four (or five) buttons under the CONTROL ROOM or STUDIO indication, highlighting it, to select the monitor mode.

ST: Stereo
L+R: Left and right mixed audio
L: Left audio in both channels
R: Right audio in both channels
SURR (CONTROL ROOM only): Surround

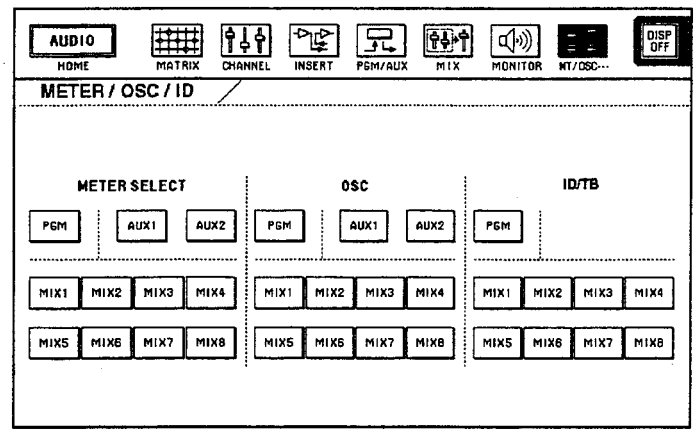
Selecting the monitor source

Press one of the following buttons, highlighting it, to select a source for output to the monitor.

PGM: Program bus
AUX1 or AUX2: Auxiliary bus 1 or 2
MIX1 to MIX8: Mix bus 1 to 8 (DMX-B4016 only)
ST16: Signals input to the INPUT 16 connector (DMX-B4008 only)
OA (On Air): Signals input to the MONITOR IN OA (on-air) connector (DMX-B4016 only)
EXT1 to EXT4: Signals input to the MONITOR IN 1 to 4 connectors (DMX-B4016 only)

MT/OSC/ID screen (LOG IN → AUDIO → MT/OSC/ID)

Pressing the MT/OSC/ID icon in the AUDIO screen calls up the MT/OSC/ID screen. This screen allows you to select buses for monitoring with the meter unit, to select output destinations for the built-in oscillator, and to select destinations for talkback and station ID interrupts.
The DMX-B4008 OSC screen only allows you to select destinations for the built-in oscillator.



MT/OSC/ID screen

Selecting output buses to be monitored with the meter (METER SELECT) (DMX-B4016 only)

The PGM button, one of the MIX1 to MIX8 buttons, and AUX1 or AUX2 button under the METER SELECT indication are highlighted to indicate the buses whose output levels are currently indicated by the bar graphs in the meter unit. To change the bus to be monitored, press the desired button, highlighting it. Note that you cannot turn off the PGM button. Bar graphs are displayed in the order PGM bus, one of MIX1 to MIX8 buses, and AUX1 or AUX2 bus, from the left.
If you are using a standard DMX-B4016 or a DMX-B4016 with expanded input, and if the output mode of the MIX connectors is set to monaural, then pressing one of the MIX1 to MIX8 buttons selects display of one of the combinations MIX1/2, MIX3/4, MIX5/6 or MIX7/8 by the LED bar graph. The MIX meter shows the odd-numbered MIX bus on the left and the even-numbered MIX bus on the right, for example as [L: MIX3, R: MIX4].

Selecting an output destination for the oscillator (OSC)

Pressing an output bus button under the OSC indication toggles it on (highlighted) and off (normal video). While the bus button is highlighted, a 1 kHz sine wave is output to the selected bus. You can select multiple output destinations.

Selecting destinations for talkback and station ID interrupts (ID/TB) (DMX-B4016 only)

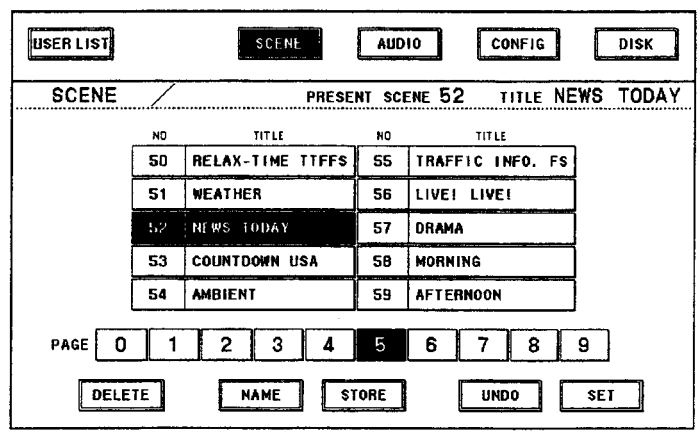
Pressing an output bus button under the ID/TB indication toggles it on (highlighted) and off (normal video). While the bus button is highlighted, signals input to the ID/TB connector are output to the selected bus.

3-2-4 Registering and Recalling Console Settings (SCENE Screen)

This unit allows you to save a variety of console settings and recall them to the console whenever necessary. A set of such settings is called a scene. This section explains how to register a scene in memory and recall it to the console.

SCENE screen (LOG IN → AUDIO → SCENE)

Pressing the SCENE button in the AUDIO screen calls up the SCENE screen.



SCENE screen

Selecting a scene (PAGE, TITLE)

You can register up to 99 scenes, numbered from 01 to 99. These scenes are divided into 10 pages, numbered from 0 to 9. To select a scene, first press the PAGE button for that scene, highlighting it. The 10 scenes in that page will be displayed. Next press the TITLE button of the desired scene. The button is highlighted to indicate the selection.

Recalling the scene to the console (SET)

After selecting a scene, press the SET button. This recalls the scene to the console.

Naming or renaming a scene (NAME)

Select a scene and press the NAME button at the bottom of the screen. Then enter a name consisting of up to 16 characters using the on-screen keyboard.

For details about the on-screen keyboard, see page 3-5.

Registering a scene (STORE)

Select a scene number and press the STORE button. This stores the current console settings in scene memory. If you have not specified a scene name, the scene is registered as "#n", where n is the scene number.

Deleting a scene (DELETE)

Select a scene number and press the DELETE button. This deletes the scene from scene memory.

Undoing the immediately previous scene operation (UNDO)

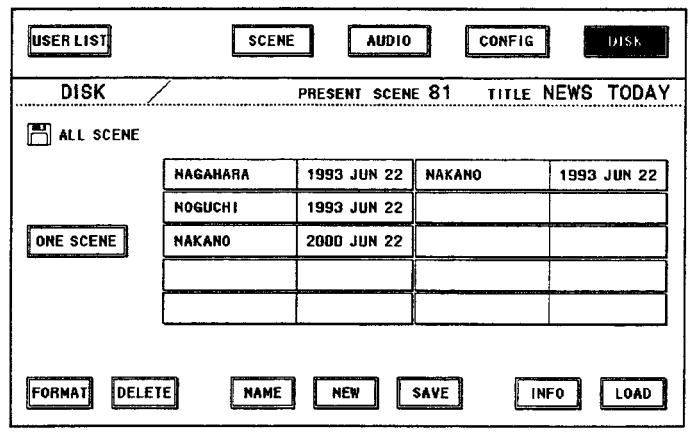
When you press the SET, DELETE, NAME or STORE button, the UNDO button is automatically highlighted. While it is highlighted, you can press it to undo the immediately previous operation. However, pressing the UNDO button when it is not highlighted has no effect.

3-2-5 Disk Operations (DISK Screen)

The DISK screen and screens below it allow you to save and load scenes (console settings) to and from a floppy disk.

DISK screen (LOG IN → AUDIO → DISK)

Pressing the DISK button in the AUDIO screen calls up the DISK screen.



DISK screen

Selecting a file

Press the file name button, highlighting it.

Formatting a floppy disk for use with the console (FORMAT)

Insert a 3.5-inch 2HD floppy disk in the floppy disk drive and press the FORMAT button. This calls up the MESSAGE WINDOW dialog box. Press the EXECUTE button to format the disk, or the CANCEL button to abandon the formatting.

Note

Before formatting a disk, check that the disk contains no necessary information. Note that you can only use a 2HD floppy disk.

Creating a new file consisting of default scenes (NEW)

Press the NEW button. This creates a new file on a floppy disk, containing 99 scenes, all of which have the default settings. The file is given a name made up of the characters "NEW_#" followed by the number of files already existing on the disk plus one, and the extension "DMX". For example, if there are three files on the disk, the name of the new file will be "NEW_#04.DMX".

Saving all scenes stored in memory to a floppy disk (SAVE)

- **When overwriting an existing file**
  Select the file and press the SAVE button. This saves all scenes currently stored in scene memory to the selected file.

  Note

  Before pressing the SAVE button, check that the selected file contains no necessary scenes.
- **When creating a new file and saving scenes**
  Press the NEW button to create a new file containing scenes with default settings, select that file, then press the SAVE button. Rename the file using the NAME button as required.

When saving all scenes, system configuration data including start/stop logic settings, user names, and user level settings are automatically saved in the file. To load system configuration data from a floppy disk, use the LOAD button in the ONE SCENE screen *(see page 3-40)*.

Naming or renaming a file (NAME)

Select the file and press the NAME button. When the NAME screen appears, enter a file name consisting of up to 8 characters with the on-screen keyboard.

For details about the on-screen keyboard, see page 3-5.

Adding a comment to a file (INFO)

Select the file and press the INFO button. This calls up the FILE INFORMATION screen *(page 3-41)*, allowing you to add a comment to the file, or to check or change comments.

Loading all scenes from a file into memory (LOAD)

Select the file and press the LOAD button. This loads all scenes from the file into memory, overwriting all console settings in scene memory. Note, however, that carrying out this operation does not overwrite the current system configuration data including start/stop logic settings, user names, and user level settings. To load system configuration data from a floppy disk, use the LOAD button in the ONE SCENE screen *(see page 3-40)*.

Note

Before pressing the LOAD button, check that no necessary console settings are stored in scene memory. If necessary, use the SAVE button to save the contents of scene memory to a floppy disk before carrying out this operation.

Deleting a file (DELETE)

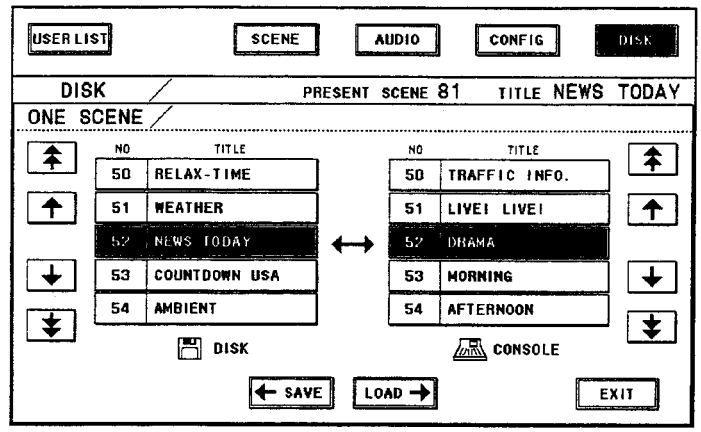
Select the file and press the DELETE button. This calls up the MESSAGE WINDOW dialog box. Press the EXECUTE button to delete the file from the floppy disk, and the CANCEL button to abandon deleting.

Loading and saving scenes one at a time (ONE SCENE)

Select the file and press the ONE SCENE button. This calls up the ONE SCENE screen *(next page)*, allowing you to load and save scenes one at a time.

ONE SCENE screen (LOG IN → AUDIO → DISK → ONE SCENE)

Pressing the ONE SCENE button in the DISK screen calls up the ONE SCENE screen. This screen allows you to save or load scenes (console settings) one at a time, using the file selected in the DISK screen.



ONE SCENE screen

Returning to the parent (DISK) screen (EXIT)

Press the EXIT button.

Selecting a scene

Press the title, highlighting it. Disk operations use the highlighted scene in the left-hand list, and console operations use the highlighted scene in the right-hand list. The scene between the scene 99 and scene 00 is titled "TIME KEEPER DT". This scene contains system configuration data including start/stop logic settings, user names, and user level settings. If, for example, system configuration data has been destroyed for some reason, you can load the data from a floppy disk to console memory by selecting this scene and pressing the LOAD button.

Displaying more scene titles (cursor buttons)

Use the cursor buttons to scroll the scene list up and down.

- ↑, ↓ : Each press of the button scrolls the list up or down one scene.
- ↟, ↡ : Each press of the button scrolls the list up or down five scenes.

Loading one scene from a floppy disk (LOAD)

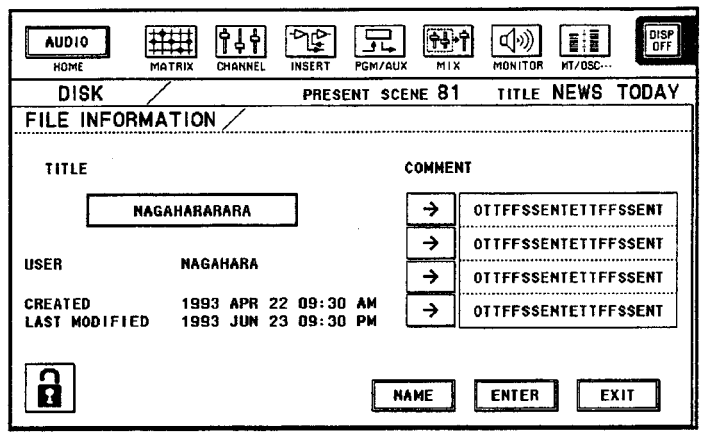
Select scenes in the console and disk lists, and press the LOAD button. The disk scene overwrites the console scene.

Saving one scene to a floppy disk (SAVE)

Select scenes in the console and disk lists, and press the SAVE button. The console scene overwrites the disk scene.

FILE INFORMATION screen (LOG IN → AUDIO → DISK → FILE INFORMATION)

Pressing the INFO button in the DISK screen calls up the FILE INFORMATION screen. This screen allows you to lock the file selected in the DISK screen, and to add, check or change comments.



FILE INFORMATION screen

Returning to the parent (DISK) screen without affecting the contents of comment (EXIT)

Press the EXIT button.

Locking the file (LOCK icon)

Pressing the lock icon toggles between locked and unlocked states. In the locked state, the file can be read but not overwritten or deleted. Note that the lock icon setting does not take effect unless you press the ENTER button.

Adding a comment (→, NAME, ENTER)

Whenever a user creates or modifies a file, the unit automatically writes the user's name to the file, along with the date of creation or modification. You can add a comment to this information by pressing one of the → buttons and then the NAME button, which calls up the on-screen keyboard. Use the on-screen keyboard to enter a comment consisting of up to 20 characters. Pressing the ENTER button writes the comment to the file.

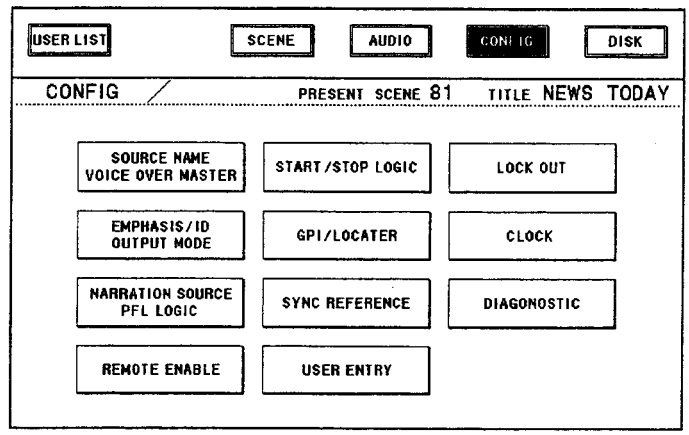
To return to the DISK screen without changing a comment, press the EXIT button.

For details about the on-screen keyboard, see page 3-5.

3-2-6 Configuring the System (CONFIG screen)

The CONFIG screen gives you access to a number of screens which you can use to configure the system.

CONFIG screen (LOG IN → AUDIO → CONFIG)



CONFIG screen

Returning to the LOG IN screen (USER LIST)

Press the USER LIST button in the upper left corner of the screen.

Moving to another screen on the same level (SCENE, AUDIO, DISK)

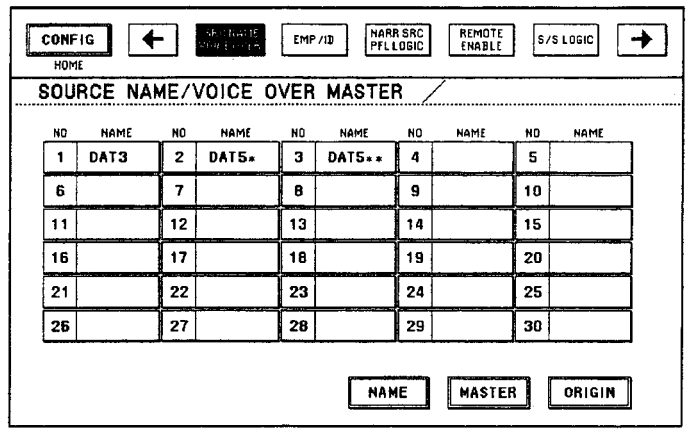
Press the SCENE, AUDIO, or DISK button at the top of the screen to move to that screen.

Moving one level down

Press one of the buttons showing the screen names.

SOURCE NAME/VOICE OVER MASTER screen (LOG IN → AUDIO → CONFIG → SOURCE NAME/VOICE OVER MASTER)

Pressing the SOURCE NAME/VOICE OVER MASTER button in the CONFIG screen calls up this screen. Use this screen to enter source names and select voice over master signals.



SOURCE NAME/VOICE OVER MASTER screen

The following operations are available on all screens one level below the CONFIG screen.

- **Returning to the CONFIG screen**
  Press the CONFIG button in the upper left corner of the screen.
- **Moving to another screen on the same level (←, →)**
  Press the ← and → keys to display different screen names on the buttons in the top row, and press the button when the name of the desired screen appears.

Naming or renaming a source (NAME)

Press the button of the source signal you want to name or rename, highlighting it. Then press the NAME button to call up the on-screen keyboard, and enter a name consisting of up to four characters. Source names can also be entered from the SOURCE INFORMATION screen *(page 3-13)*. The name entered last takes precedence.
Note that you cannot name or rename a source when the MASTER button is highlighted.

For details about the on-screen keyboard, see page 3-5.

Using the origin information (source ID code added to AES/EBU audio signals by the source equipment) as the source name

Press the button of the source signal whose name is to be the origin information, highlighting it. Then press the NAME button to call up the on-screen keyboard, and enter the single character '*'.

Viewing the origin information of source signals (ORIGIN)

Press the ORIGIN button at the bottom of the screen, highlighting it. The origin information names replace the source names in the list. Press the ORIGIN button again, returning it to normal video, to return to the normal source name display.

Symbols displayed when the ORIGIN button is highlighted

When the ORIGIN button is highlighted, symbols displayed have the following meanings.

- **name*:** A name followed by an asterisk (*) is the origin information (source ID code added to AES/EBU audio signals by source equipment).
- **----*:** No source signal is assigned to the channel. (DMX-B4008 only)
- **!!!!*:** The source signal does not contain origin information, or the origin information is invalid.
- **####*:** No source equipment is connected to this input connector, or there is no input signal from the connected equipment.

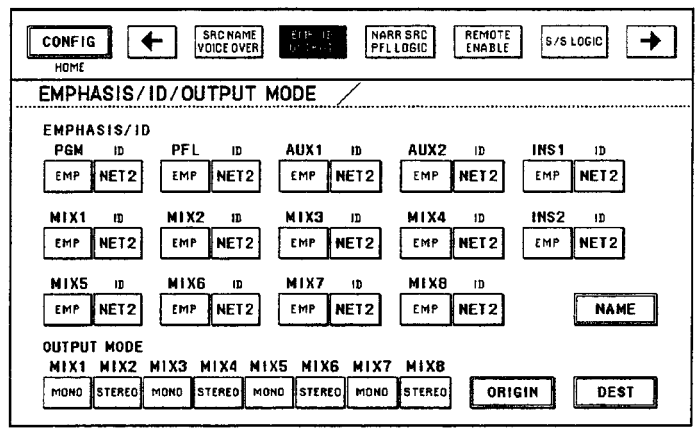
Making the source signal a voice over master (MASTER)

You may want to automatically lower the output level of a signal whenever there is input from another signal. For example, it is common to lower the level of background music whenever there is input from a microphone. This function is called voice over. A voice over master is a signal, such as microphone input, which causes other signals to be output at lower levels.

To designate a source signal as a voice over master, press the MASTER button, highlighting it, and then press the button for the desired source signal. The button for that signal is highlighted. In this state, pressing the highlighted source signal button, returning it to normal video, cancels the voice over master designation. Note that you can only designate a single source signal as a voice over master. Press the MASTER button again, returning it to normal video, to return to the normal source name display.

EMPHASIS/ID/OUTPUT MODE screen (LOG IN → AUDIO → CONFIG → EMPHASIS/ ID/OUTPUT MODE)

Pressing the EMPHASIS/ID/OUTPUT MODE button in the CONFIG screen calls up this screen. Use this screen to turn emphasis on and off, and to specify output IDs. You can also use it to select the output mode (DMX-B4016 only).



EMPHASIS/ID/OUTPUT MODE screen

Turning emphasis on and off (EMP)

To turn emphasis on, press the EMP button of the desired output bus, highlighting it. To turn emphasis off, press the highlighted EMP button, returning it to normal video.

The EMP buttons under the INS indication always appear in normal video.

Entering or changing an output ID (ID, NAME)

There are two types of output IDs. An origin ID indicates the signal source, and a destination ID indicates the destination. To enter or change an ID, press the ORIGIN or DEST button, highlighting it. This displays the existing origin or destination IDs in the ID buttons at the center of the screen. Next press the ID button of the bus you want to identify, highlighting it, and press the NAME button to call up the on-screen keyboard. Use the keyboard to enter an ID consisting of up to four characters.

For details about the on-screen keyboard, see page 3-5.

Selecting stereo or monaural output for the MIX1 to MIX8 connectors (OUTPUT MODE)

This function allows you to select stereo or monaural output from the MIX1 to MIX8 connectors. To select the output mode, press one of the OUTPUT MODE buttons at the bottom of the screen, toggling the indication between MONO and STEREO .

MONO: Eight monaural signals are output from the eight MIX connectors.

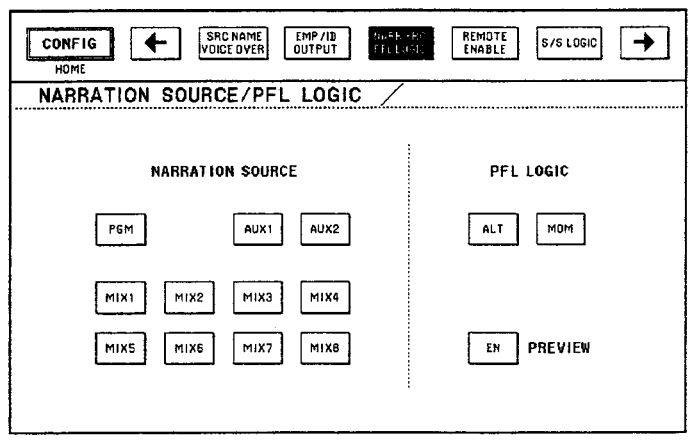
STEREO: Four pairs of stereo signals are output from the MIX1 to MIX4 connectors (nothing is output from the MIX5 to MIX8 connectors).

Notes

- If you have installed the optional DMBK-4011 Output Extension Kit in a DMX-B4016, you can select stereo or monaural for the MIX1 to MIX8 buses individually.
- The OUTPUT MODE buttons are not displayed in the DMX-B4008 screen.

NARRATION SOURCE/PFL LOGIC screen (LOG IN → AUDIO → CONFIG → NARRATION SOURCE/PFL LOGIC)

Pressing the NARRATION/PFL LOGIC button in the CONFIG screen calls up this screen. Use this screen to select an output bus with no delay for microphone audio, to specify the on/off mode of the PFL button on the console, and to link PFL bus output to a machine controller.



NARRATION SOURCE/PFL LOGIC screen

Selecting an output bus with no delay for microphone audio (NARRATION SOURCE)

Because this unit processes input signals digitally, there is a slight delay before audio input signals are output to the monitor. If an announcer finds that the delay makes it difficult to speak while monitoring his or her own voice, you can designate the bus whose output is to be monitored by the announcer as a narration source. To eliminate the delay on that bus, first press the ACCESS button for the channel carrying microphone audio signals. This calls up the CHANNEL screen. Then, turn off the bus button in the ASSIGN section corresponding to the narration source bus, eliminating the microphone audio signals from the bus. The remaining signals on the bus are mixed, converted to analog audio signals, and output from the STUDIO MONITOR OUT connectors, where they are mixed with the microphone audio signals coming directly from the Mic/Line Input Module. Note, however, that you cannot designate the PGM bus, or the one-air bus as a narration source since microphone audio signals are not included in that bus.

To designate an output bus as a narration source, press one of the bus buttons under the NARRATION SOURCE indication, highlighting it. Press the highlighted bus button again, returning it to normal video, to cancel the designation.

Note

This feature is available only if you have installed the optional DMBK-4012 20 Bit Mic/Line Input Module.

Specifying the on/off mode of the PFL button on the console (PFL LOGIC)

Either the ALT or MOM button under the PFL LOGIC indication is highlighted in reverse video to show the current operational mode of the PFL button on the console. To select the other mode, press the button displayed in normal video, highlighting it. There are two modes, as follows.

ALT (alternate): Pressing the PFL button toggles it on and off.

MOM (momentary): PFL button is on as long as it is held down.

Linking PFL bus output to machine controller operations (PREVIEW)

If you have installed the optional DMBK-4001 Machine Controller, you can use the PREVIEW button in this screen to link the output of the PFL bus to machine controller operations. Pressing the PREVIEW button toggles it between EN (enable) and DIS (disable). Select EN for linked operation. Linked operation provides the following features.

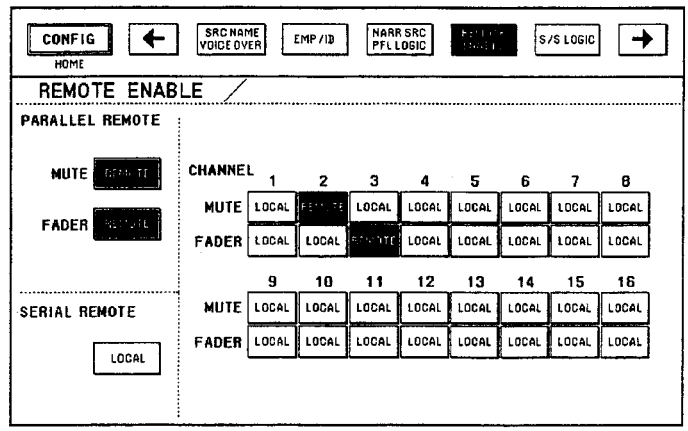
- Starting playback on a CD player, DAT or other external device by sending control signals from the machine controller causes playback signals from that device to interrupt the PFL bus.
- Pressing the STOP button on the machine controller terminates the interrupt on the PFL bus.
- Turning on the console PFL button cues up the device controlled by the machine controller and starts playback on that device.

Note

This setting has no effect unless you have installed the optional DMBK-4001 Machine Controller.

REMOTE ENABLE screen (LOG IN → AUDIO → CONFIG → REMOTE ENABLE)

Pressing the REMOTE ENABLE button in the CONFIG screen calls up this screen. Use this screen to make settings related to control of this unit from external equipment. The DMX-B4008 screen shows settings for eight channels. If you have installed the optional DMBK-4010 Input Extension Kit in a DMX-B4016, this screen shows 24 channels.



REMOTE ENABLE screen

Enabling control from equipment connected to the REMOTE MUTE and REMOTE FADER connectors (PARALLEL REMOTE)

Pressing the MUTE and FADER buttons at the left side of the screen toggles them between REMOTE (highlighted) and LOCAL (normal video). When these buttons are set to REMOTE, the unit can be controlled via the REMOTE MUTE (MUTE button) and REMOTE FADER (FADER button) connectors. You can select the channels subject to remote control by pressing the desired channel buttons, highlighting them. To cancel the selection, press the highlighted channel button, setting it to LOCAL (normal video).

Enabling control from equipment connected to the 9-pin REMOTE IN/OUT connector (SERIAL REMOTE)

Pressing the SERIAL REMOTE button at the left side of the screen toggles it between REMOTE and LOCAL. When this button is set to REMOTE (reverse video), the unit can be controlled via the REMOTE IN/OUT connector. Note that you cannot set the SERIAL REMOTE button to REMOTE at the same time as either of the MUTE and FADER buttons.

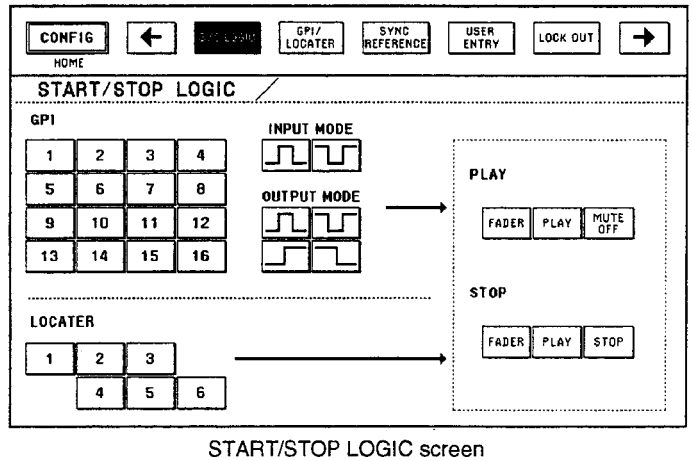
Restrictions when the unit is controlled remotely

The following restrictions apply when the unit is controlled from external equipment.

- The MUTE buttons and channel faders on the console panel are disabled.
- When the unit is controlled via the 9-pin REMOTE IN/OUT connector, scene settings, and muting using the channel copy function *(see page 2-3)* are enabled.
- When the unit is controlled via the REMOTE MUTE or REMOTE FADER connector, scene settings, and muting using the channel copy function are enabled only for the moment immediately after an operation. Subsequent settings are controlled by the external equipment.

START/STOP LOGIC screen (LOG IN → AUDIO → CONFIG → START/STOP LOGIC)

Pressing the START/STOP LOGIC button in the CONFIG screen calls up this screen. Use this screen to make settings related to the output and input of control signals to and from external audio equipment such as CD players and DAT.



START/STOP LOGIC screen

Settings for GPI control signals (GPI)

You can connect up to 16 audio devices to the GPI connectors, and set the conditions for input and output of control signals for each device. To make the settings for a device, press one of the 16 GPI buttons, highlighting it, and then choose the input and output modes and the play and stop conditions. If settings have already been made for that device, they are displayed on the screen. In order for the settings made here to take effect, you must assign source signals to the GPI connectors or machine controller locaters using the GPI/LOCATER screen *(page 3-53)*.

Setting input and output modes (INPUT MODE, OUTPUT MODE)

Before making the following settings, press one of the 16 device buttons, highlighting it, to select the device to be affected by the settings.

- **INPUT MODE**

  The INPUT MODE buttons select when to light the ▶PLAY and ■STOP buttons below the channel faders in response to control signals from external equipment.

  ⎍ : Light when the signal is high

  ⎏ : Light when the signal is low

- **OUTPUT MODE**

  The OUTPUT MODE buttons select the format of control signals sent to external equipment.

  ⎍ : Rising pulse

  ⎏ : Falling pulse

  ⎍ : Active high (remains high until the signal goes off)

  ⎏ : Active low (remains low until the signal goes off)

Setting output conditions (PLAY, STOP)

The buttons under the PLAY and STOP indications select states which trigger the output of control signals. There are three buttons in the PLAY section and three buttons in the STOP section, allowing you to relate the state of the channel fader and buttons on this unit which correspond to external equipment to conditions for the output of control signals to the external equipment.

Make these settings after highlighting one of the 16 device buttons.

- **Setting output conditions for play commands**

  The three buttons in the PLAY section select conditions for the output of a play command to an external audio device. Press one of the three buttons, highlighting it, to include the state represented by the button in the trigger condition. To exclude the state, press the button again, returning it to normal video.

  If two or three buttons are highlighted, the play command is output only when all of the selected conditions are true. In the following, channel refers to the channel to which signals are input from the currently selected (highlighted) device.

  FADER: The channel fader is above a certain level.

  PLAY: The ▶PLAY button for the channel has been pressed.

  MUTE OFF: The MUTE button for the channel is off, and at least one of the conditions above is true.

- **Setting output conditions for stop commands**
  The three buttons in the STOP section select conditions for output of a stop command to an external audio device. Press one of the three buttons, highlighting it, to include the state represented by the button in the trigger condition. To exclude the state, press the button again, returning it to normal video.
  You can combine the FADER and PLAY conditions, or the FADER and STOP conditions. Note, however, that you cannot combine the PLAY and STOP conditions. In the following, channel refers to the channel to which signals are input from the currently selected (highlighted) device.
  FADER: The channel fader is below a certain level.
  PLAY: The ▶PLAY button for the channel has been pressed.
  STOP: The ■STOP button has been pressed.

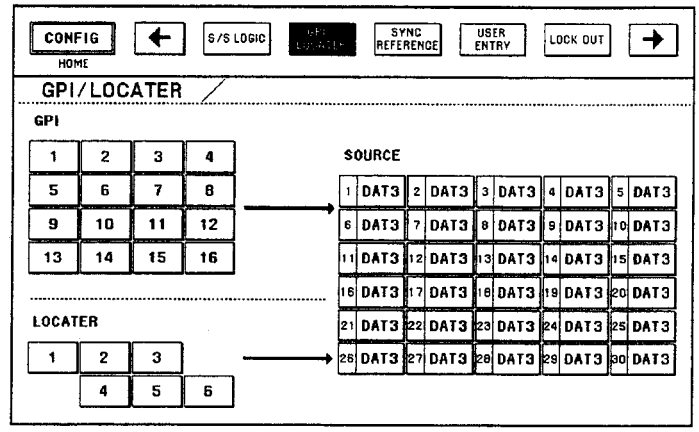
Setting conditions for the output of control signals from MACHINE CONTROL connectors 1 to 6 (LOCATER, PLAY, STOP) (effective only when you have installed the optional DMBK-4001 Machine Controller)

The six buttons under the LOCATER indication show the device numbers of the devices connected to the six MACHINE CONTROL connectors. To set conditions for the output of control signals, first press the device number button for the device to be affected by the settings.

For details about setting the output conditions, see "Setting output conditions for play commands" on the previous page and "Setting output conditions for stop commands" above.

GPI/LOCATER screen (LOG IN → AUDIO → CONFIG → GPI LOCATER)

Pressing the GPI/LOCATER button in the CONFIG screen calls up this screen. Use this screen to assign source signals to the GPI connectors and machine controller locaters.



GPI/LOCATER screen

Meaning of assigning source signals to external equipment

You can connect up to 16 audio devices to the GPI connectors, and up to six devices to MACHINE CONTROL connectors 1 to 6. Assigning source signals to the GPI connectors or locaters makes it possible to control these audio devices with the channel faders and the channel ▶PLAY and ■STOP buttons.

Assigning the source signals

Press one of the device number buttons in the LOCATER or GPI section, highlighting it. Then press one of the source name buttons in the SOURCE section, highlighting it. The selected source is assigned to the selected external equipment. To cancel the assignment, press the highlighted source button, returning it to normal video.

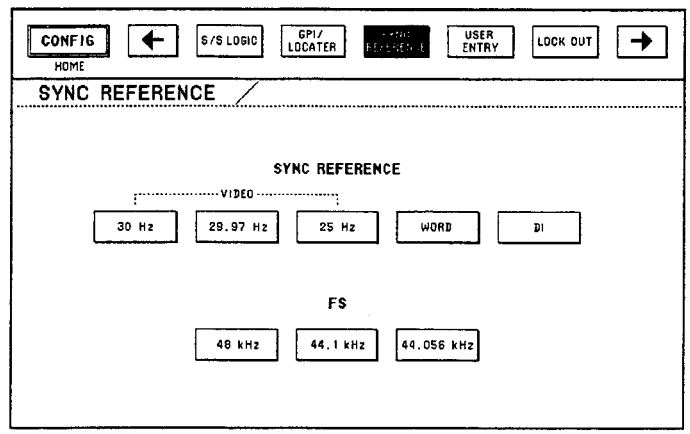
Note

The DMX-B4008 screen shows 16 source name buttons in the SOURCE section.

SYNC REFERENCE screen (LOG IN → AUDIO → CONFIG → SYNC REFERENCE)

Pressing the SYNC REFERENCE button in the CONFIG screen calls up this screen. Use this screen to check the reference sync signal and sampling frequency currently being used by the unit.
The SYNC REFERENCE section displays a list of reference signals, and the FS section displays a list of sampling frequencies. Sync signal and sampling frequency which are currently being used are highlighted. This screen is read-only. None of the items can be changed here.

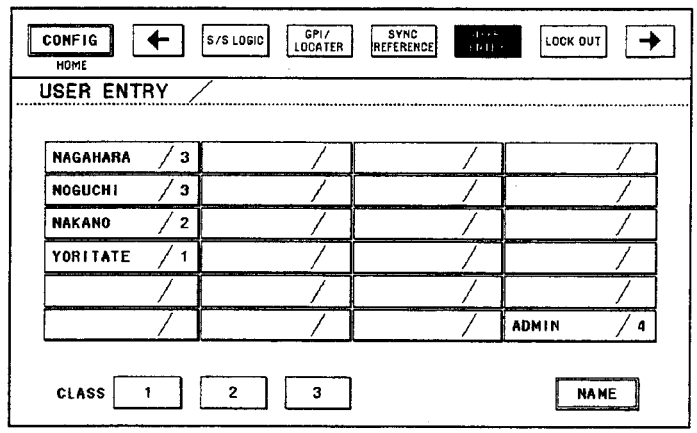
For information about setting reference sync signal and sampling frequency, refer to the maintenance manual.



SYNC REFERENCE screen

USER ENTRY screen (LOG IN → AUDIO → CONFIG → USER ENTRY)

Pressing the USER ENTRY button in the CONFIG screen calls up this screen. Use this screen to enter user names and set the user level.



USER ENTRY screen

Entering a user name (NAME)

After pressing and highlighting a user name button, press the NAME button. The on-screen keyboard appears, allowing you to enter a user name consisting of up to 10 characters.

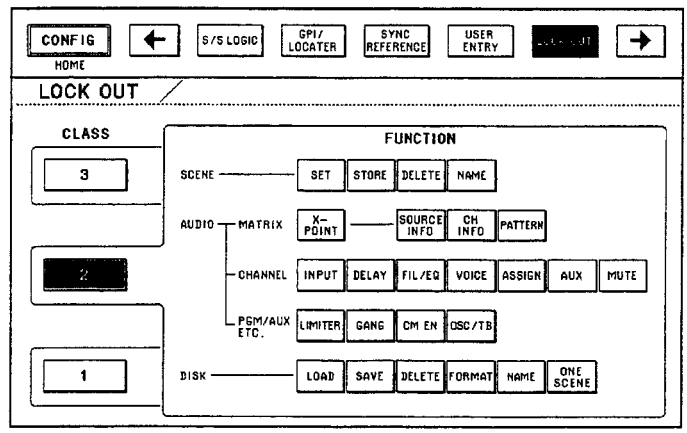
For details about the on-screen keyboard, see page 3-5.

Setting the user level (CLASS)

After pressing and highlighting a button for the user, press one of the CLASS buttons. The position in the lower right is reserved for the user with level 4.

LOCK OUT screen (LOG IN → AUDIO → CONFIG → LOCK OUT)

Pressing the LOCK OUT button in the CONFIG screen calls up this screen. Use this screen to limit the setup screens which users on level 1 to level 3 are able to access.



LOCK OUT screen

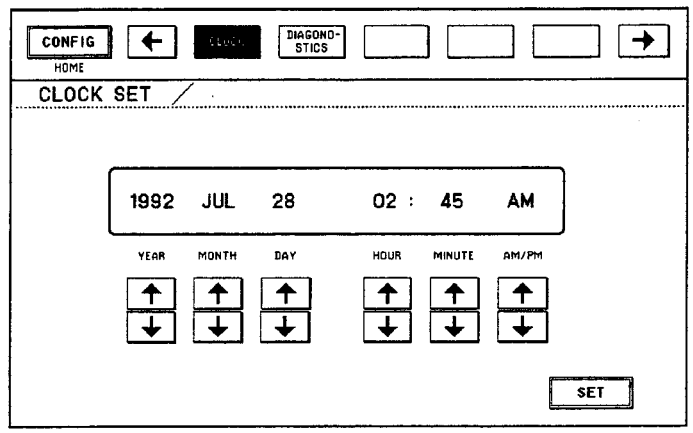
Restricting access to setup screens

Press one of the CLASS buttons, highlighting it, to select the user level. The buttons representing the screens to which users with the selected level have access are displayed in normal video. To deny access to a screen, press the screen button, highlighting it. To grant access, press the highlighted screen button, returning it to normal video.

Users on level 4 always have access to every screen. Therefore there is no CLASS button for level 4.

CLOCK SET screen (LOG IN → AUDIO → CONFIG → CLOCK SET)

Pressing the CLOCK SET button in the CONFIG screen calls up this screen. Use this screen to set the system date and time.



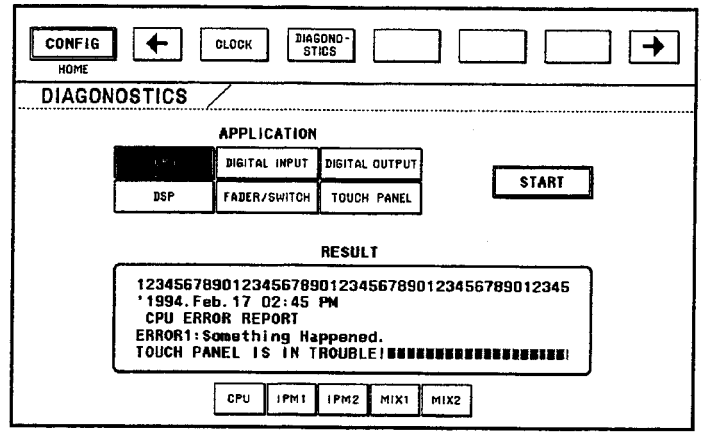
CLOCK SET screen

Setting the date and time

Press the button for the item you want to set, highlighting it, and then adjust using the ↑ and ↓ buttons. When finished, press the SET button to reset the internal clock.

DIAGNOSTICS screen (LOG IN → AUDIO → CONFIG → DIAGNOSTICS)

Pressing the DIAGNOSTICS button in the CONFIG screen calls up this screen. Use this screen for self-diagnostics tests of the system.



DIAGNOSTICS screen

Starting the self-diagnostics program

Press one of the following buttons, highlighting it, and then press the START button. The system performs a self-diagnostics test and reports the results.

CPU: Test the CPU. If there is no error, the RESULT section shows the software version of the system.

If an error is detected in the following three tests, the RESULT section shows the point where the error occurred and the CPU status.

DIGITAL INPUT: Test the digital input circuit.

DIGITAL OUTPUT: Test the digital output circuit.

DSP: Test the DSP (digital signal processor) circuit.

For details, refer to the maintenance manual.

Checking console faders, parameter adjustment knobs and switches (FADER/SWITCH)

Press the FADER/SWITCH button, highlighting it, and then press the START button. A screen with eight bar graphs and an EXIT button appears. Perform the following checks and press the EXIT button when finished.

Faders: Move the faders and observe changes in the four-digit hexadecimal numbers displayed in the channel ID indicators. The two most significant digits show the master fader level, and the two least significant digits the channel fader level. The lowest possible level is 00, and the highest is FF. The LED bar graphs in the meter unit show variations in the master fader level.

Parameter adjustment knobs: Rotate the knobs and observe variations in the on-screen bar graphs. The upper graphs varies when you press the knobs while rotating, and the lower graphs vary when you rotate them without pressing.

Switches: Pressing buttons on the console should toggle them between lit and off.

Testing the setup display touch panel (TOUCH PANEL)

Press the TOUCH PANEL button, highlighting it, and then press the START button. The screen goes blank, except for an EXIT button. Press any point on the screen to toggle a block of 32 × 32 dots between lit and off. When finished, press the EXIT button.

Appendix

This section describes the messages which appear when the unit does not work properly and lists the principal specifications of this unit.

Error Messages **A-2**
Specifications **A-6**

Error Messages

If an error occurs while operating this unit, a message window showing an error message will appear.
The meaning of the error messages and actions to take are as follows. If an error persists even after you take the necessary action described below, contact a Sony service representative.

Error messages related to the processor

If one of these messages appears, first confirm the nature of the error, and then press the EXIT button to exit the message window. Once the error occurs, the EMG indicator in the meter unit remains lit until you eliminate the cause of the error.

Message	Meaning	Action to take
Processor main XX V power failure or Processor backup XX V power failure	Power is not being supplied to the "XX"-volt circuits of the main or backup power supply. "XX" is a value representing a voltage.	Check that the power cord is properly connected.
No reference video	A reference video signal is not being input even though a video signal was selected as the sync signal.	Check that a reference video signal is being input to the REF VIDEO connector, and that the empty REF VIDEO connector is properly terminated.
Reference video unlocked	Error in the video PLL	Check that the sync signal selected with the bit switches is being properly input.
No reference word	Word clock signal is not being supplied to the main PLL.	Check that the sync signal selected with the bit switches is being properly input.
Reference word unlocked	Error in the main PLL	Check that the sync signal selected with the bit switches is being properly input.
DSP CPU error	Error in the CPU of the processor	Power off the processor and console, and then power them on again.

Error messages related to the console

If one of these messages appears, first confirm the nature of the error, and then press the EXIT button to exit the message window. Once the error occurs, the EMG indicator in the meter unit remains lit until you eliminate the cause of the error.

Message	Meaning	Action to take
Backup memory error	An error has been detected in the scene data or pattern data stored in backup memory of the unit (Data related to the USER ENTRY, START/ STOP LOGIC, GPI/LOCATER screens are not affected even when this message appears)	Load the necessary data from a floppy disk. **Note** This message appears if you leave the console power off for several days. Since scene data and pattern data is lost several days after you power off the console, we recommend that you store the necessary data to a floppy disk.
Configuration data lost	System configuration data has been lost.	Load the system configuration data from a floppy disk using the ONE SCENE screen *(see "selecting a scene" on page 3-40).*
HDLC communication error	Communication error between the processor and console	Check that the cable is properly connected between the CONSOLE DATA connector of the processor and the PROCESSOR DATA connector of the console.
Console main XX V power failure or Console backup XX V power failure	Power is not being supplied to the "XX"-volt circuits of the main or backup power supply. "XX" is a value representing a voltage.	Check that the power cord is properly connected.

Error messages related to floppy disk operations

If one of these messages appears, first confirm the nature of the error, and then press the EXIT button to exit the message window. The EMG indicator in the meter unit does not light when these messages appear.

Message	Meaning	Action to take
Floppy disk drive not ready	A floppy disk is not inserted into the floppy disk drive.	Insert a floppy disk into the floppy disk drive.
	A floppy disk is not completely inserted.	Reinsert the floppy disk.
	Error in the floppy disk drive	Power off the console and power it on again.
Non DMX-B4000 file	You attempted to access a file which is not a DMX-B4000 file.	Specify a DMX-B4000 file.
File is write protected	You attempted to overwrite or delete a locked file.	Unlock the file in the FILE INFORMATION screen.
Disk is write protected	You attempted to write on a write protected floppy disk.	Release write protection of the floppy disk.
Insufficient disk space	Vacant space on the disk is insufficient.	Either delete unnecessary files or use another disk.
Unformatted disk	Disk is not initialized or is initialized in another format.	Execute formatting in the DISK screen.
SEEK error	SEEK error occurred while accessing a floppy disk.	Clean the head of the drive using a commercially available head cleaner for floppy disk drives. If the error persists, the floppy disk may be damaged.
Read/write error	Error occurred while reading from or writing to the disk.	
Disk error	Unknown error regarding a floppy disk	Use another floppy disk.

Messages displayed during floppy disk operations

When the floppy disk drive starts to operate, one of these messages appears in the message window. When the operation ends, the message window automatically closes.

Message	Meaning
Now formatting disk	A floppy disk is being initialized.
Now reading directory	Directory is being read from a floppy disk.
Now reading data	Data is being read from a floppy disk.
Now writing data	Data is being written to a floppy disk.
Now deleting file	File is being deleted from a floppy disk.
Now creating default file	A new file with default settings is being created.
Now renaming file	File on a floppy disk is being renamed.

Messages to confirm execution of disk operations

If you attempt to format a floppy disk or delete a file, a dialog box appears to confirm execution of the operation. Press the EXECUTE button to execute the operation and the CANCEL button to cancel it.

Message	Operation
Format disk?	Format a disk
Delete file?	Delete a file

Specifications

General

Power requirements	120 V AC, 50/60 Hz (UC) 220 to 240 V AC, 50/60 Hz (EK)
Power consumption	**DMX-B4008** Processor: 80 W (UC), 0.8 A (EK) 5 V DC, 5 A 15 V DC, 1 A –15 V DC, 1 A Console: 170 W (UC), 2 A (EK) **DMX-B4016** Processor: 220 W (UC), 2.5 A (EK) Console: 210 W (UC), 2.5 A (EK)
Operating temperature	5°C to 35°C (41°F to 95°F)
Storage temperature	–20°C to 60°C (–4°F to 140°F)
Dimensions	**DMX-B4008** Processor: 424 × 177 × 450 mm (16 3/4 × 7 × 17 3/4 inches) (w/h/d) Console: 682 × 330 × 710 mm (26 7/8 × 13 × 28 inches) (w/h/d) **DMX-B4016** Processor: 424 × 310 × 510 mm (16 3/4 × 12 1/4 × 19 3/4 inches) (w/h/d) Console: 990 × 330 × 710 mm (39 × 13 × 28 inches) (w/h/d) **Meter unit** 550 × 160 × 80 mm (21 3/4 × 6 3/8 × 3 1/4 inches) (w/h/d)
Mass	**DMX-B4008** Processor: 13.5 kg (29 lb 12 oz) Console: 50 kg (110 lb 3 oz) **DMX-B4016** Processor: 28 kg (61 lb 11 oz) Console: 72 kg (158 lb 11 oz) **Meter unit** 4.5 kg (9 lb 14 oz)

Input connectors

Digital input

Digital audio input

DMX-B4008
- Matrix inputs: 16 stereo
- External monitor inputs: 1 stereo
- Matrix: 16 × 8

DMX-B4016
- Matrix inputs: 30 stereo
- External monitor inputs: 4 stereo
- ID/TB inputs: 1 stereo
- On-air inputs: 1 stereo
- Matrix: 30 × 16

Format: AES/EBU
Connectors: XLR-3-31
Data slot: 24 bits
Impedance: 110 Ω

Insertion input

DMX-B4008
- Inputs: 1 stereo

DMX-B4016
- Inputs: 2 stereo

Format: AES/EBU
Connectors: XLR-3-31
Data slot: 24 bits
Impedance: 110 Ω

Analog input (with 20 Bit Mic/Line Input Module installed)

MIC (microphone) input

Inputs: 2 channels
Connectors: XLR-3-31
Reference input level: –70 dBs to –20 dBs
Maximum input level: +4 dBs
Input circuit: 3 kΩ, balanced

LINE (line input)

Inputs: 2 channels
Connectors: XLR-3-31
Reference input level: +4 dBs
Maximum input level: +24 dBs
Input circuit: 10 kΩ, balanced

Insertion input

Inputs: 2 channels
Connectors: XLR-3-31
Reference input level: +4 dBs
Maximum input level: +24 dBs
Input circuit: 10 kΩ, balanced

Word sync signal input

Format: W.CLK, TTL level
Minimum input voltage: 3.0 V
Connectors: BNC type
Loop through: active
Sampling frequencies: 44.056 kHz, 44.1 kHz, 48 kHz
Impedance : 75 Ω

DI sync signal input

DMX-B4008
Uses digital input signal selected by switch on the board in the processor
DMX-B4016
Uses input signal to DI SYNC connector
Format: AES/EBU
Connector: XLR-3-31
Impedance: 110 Ω

Reference video signal input

Format:
Composite video signal
1 V p-p ± 0.2 V p-p, NTSC color (29.97 Hz), NTSC monochrome (30 Hz),
PAL (25 Hz)
Composite sync signal
0.2 to 5 Vp-p
Connectors: BNC type
Loop through: possible
Termination: 75 Ω

Output connectors

Digital output

PGM (program) output
DMX-B4008
Outputs: 8 stereo
DMX-B4016
Outputs: 2 stereo
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 24 bits

AUX (auxiliary) output
Outputs: 2 stereo
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 24 bits

Insertion output

DMX-B4008
Outputs: 1 stereo
DMX-B4016
Outputs: 2 stereo
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 24 bits

Mix output (DMX-B4016 only)
Outputs: 4 stereo or 8 monaural
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 24 bits

Dubbing output (DMX-B4016 only)
Outputs: 8 stereo
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 24 bits

DIGITAL OUT output (with 20 Bit Mic/Line Input Module installed)
Outputs: 1 stereo
Format: AES/EBU
Connectors: XLR-3-32
Data slot: 20 bits

Analog output

Monitor output (MONITOR OUT)
Outputs: 4 stereo
Connectors: XLR-3-32
Reference output level: +4 dBs, 600 Ω load
Maximum output level: +24 dBs, 600 Ω load
Output impedance : 150 Ω, balanced, 1 kHz
Frequency response: 20 Hz to 20 kHz, +0.2/–1.0 dB
Distortion ratio: Maximum 0.1%
Dynamic range: Minimum 100 dB (20 Hz to 20 kHz
Crosstalk: Minimum 60 dB (8 kHz)

Insertion output (with 20 Bit Mic/Line Input Module installed)
Outputs: 2 channels
Connectors: XLR-3-32
Reference output level: +4 dBs
Maximum output level: +24 dBs
Output circuit: 150 Ω, balanced, matches 600 Ω load

Word sync signal output

Format: W.CLK, buffered out, TTL level
Connectors: BNC type
Channels: 1 channel
Sampling frequencies: 44.056 kHz, 44.1 kHz, 48 kHz

Specifications

Equalizer

Frequency ranges	Low range: 21 Hz to 330 Hz (shelving type) Middle range: 220 Hz to 3.3 kHz High range: 1 kHz to 16 kHz (shelving type)
Gain adjustment range	±15 dB
Q type	High and low range: 0.7, fixed Middle range: 2.0, fixed

Filters

Cut off frequency	High-cut filter: 8 kHz Low-cut filter: 120 Hz
Roll off characteristics	–12 dB/octave

Limiter/compressor

Threshold	–60 dBFs to 0 dBFs
Attack time	30 µs to 300 ms
Release time	30 ms to 3 s
Ratio	1:1 to ∞:1

Interface connectors

REMOTE IN/OUT	D-sub 9-pin, female
PARALLEL REMOTE SCENE	D-sub 15-pin, female
PARALLEL REMOTE MUTE	D-sub 50-pin, female
PARALLEL REMOTE FADER	D-sub 50-pin, female
AUDIO	D-sub 37-pin, female
ANALOG METER	D-sub 9-pin, female
DIGITAL METER	D-sub 15-pin, female
DATA	D-sub 15-pin, female
GPI 1	D-sub 50-pin, female
GPI 2	D-sub 50-pin, female
GPI 3	D-sub 25-pin, female
KEYBOARD	D-sub 9-pin, female
DIGITAL RGB	D-sub 9-pin, female
COMMUNICATION	D-sub 37-pin, female

Output meters

Type	100-segment LED bar graphs
Number	PGM: 2 (L, R) MIX: 2 (L, R) (DMX-B4016) AUX: 2 (L, R) (DMX-B4016) AUX: 4 (L2, R2) (DMX-B4008)
Functions	Peak hold: 1.5 s Return time: 0.3 s (–30 dBFs)

Snapshot automation

Maximum storable scenes	99
Contents of scene	Input name, matrix, channel parameters
Data storage media	3.5-inch floppy disk

Other

Built-in oscillator	1 kHz, sine wave, –20 dBFs

20 Bit Mic/Line Input Module

Frequency response	20 Hz to 20 kHz, +0.2 dB/–0.5 dB (–20 dBFs)
Total harmonic distortion	0.02% (–20 dBFs, 1 kHz)
Dynamic range	100 dB or above
Equivalent input noise	Microphone input: –123 dBs (150 Ω)
Crosstalk	60 dB or above (8 kHz)

Accessories

AC power cord (2 sets)
Connection cable (for console-processor control signal, 10 m)
Connection cable (for console-processor audio signal, 10 m)
Connection cable (for console-processor sync signal, with BNC connectors, 10 m)
Connection cable (for console-meter unit control signal, 1 m)
Connection cable (for console-meter unit audio signal, with XLR connectors, 1 m)
Terminator for REF VIDEO connector
Operation Manual (1)
Maintenance Manual Part 1 (1)

Options

DMBK-4001 Machine Controller
Main unit: 405 × 80 × 225 mm (16 × 3 1/4 × 8 7/8 inches) (w/h/d), 2.0 kg (4 lb 6 oz)
Connector panel: 306 × 38 × 60 mm (12 1/8 × 1 1/2 × 2 3/8 inches) (w/h/d), 0.5 kg (1 lb 1 oz)
DMBK-4002 Mixer Stand
80 × 515 × 800 mm (3 1/4 × 20 3/8 × 31 1/2 inches) (w/h/d), 25 kg (55 lb 1 oz)
DMBK-4003 VU Meter Panel
Meter panel: 230 × 40 × 60 mm (9 1/8 × 1 5/8 × 2 3/8 inches) (w/h/d), 0.5 kg (1 lb 1 oz)
Connector panel: 230 × 40 × 140 mm (9 1/8 × 1 5/8 × 5 5/8 inches) (w/h/d), 0.5 kg (1 lb 1 oz)
DMBK-4004 Blank Frame
308 × 330 × 710 mm (12 1/4 × 13 × 28 inches) (w/h/d), 10 kg (22 lb)
DMBK-4005 Table Kit (for DMX-B4008)
DMBK-4006 Table Kit (for DMX-B4016)
Side panels (2): 40 × 90 × 840 mm (1 5/8 × 3 5/8 × 33 1/8 inches) (w/h/d), 2 kg (4 lb 6 oz)
Master frame pad: 370 × 100 × 125 mm (14 5/8 × 4 × 5 inches) (w/h/d), 1.2 kg (2 lb 10 oz)
Channel frame pad: 308 × 100 × 125 mm (12 1/4 × 4 × 5 inches) (w/h/d), 1 kg (2 lb 3 oz)
DMBK-4007 Backup Power Supply Unit (for DMX-B4008 processor)
120 V AC (UC) or 220 to 240 V AC (EK), 50/60 Hz, 80 W (UC), 0.8 A (EK), 424 × 45 × 150 mm (16 3/4 × 1 13/16 × 6 inches) (w/h/d), 3.5 kg (7 lb 1 oz)
DMBK-4008 Backup Power Supply Unit (for DMX-B4016 processor)
120 V AC (UC) or 220 to 240 V AC (EK), 50/60 Hz, 220 W (UC), 1.5 A (EK), 370 × 60 × 420 mm (14 5/8 × 2 3/8 × 16 5/8 inches) (w/h/d), 5.5 kg (12 lb 2 oz)
DMBK-4009 Backup Power Supply Unit (for console)
120 V AC (UC) or 220 to 240 V AC (EK), 50/60 Hz, 210 W (UC), 1.5 A (EK), 310 × 60 × 420 mm (12 1/4 × 2 3/8 × 16 5/8 inches) (w/h/d), 5.5 kg (12 lb 2 oz)
DMBK-4010 Input Extension Kit
Channel frame: 308 × 30 × 710 mm (12 1/4 × 13 × 28 inches) (w/h/d), 12 kg (26 lb 7 oz)
Circuit board (2): 320 × 23 × 380 mm (12 5/8 × 29/32 × 15 inches) (w/h/d), 1 kg (2 lb 3 oz)
DMBK-4011 Output Extension Kit
320 × 23 × 380 mm (12 5/8 × 29/32 × 15 inches) (w/h/d), 1 kg (2 lb 3 oz)

DMBK-4012 20 Bit Mic/Line Input Module

Control panel: 308 × 45 × 80 mm (12 1/4 × 1 13/16 × 3 1/4 inches) (w/h/d/), 0.5 kg (1 lb 1 oz)

Circuit board: 308 × 40 × 260 mm (12 1/4 × 1 5/8 × 10 1/4 inches) (w/h/d), 1 kg (2 lb 3 oz)

Design and specifications are subject to change without notice.

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